FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 28—Number 48 DECEMBER 1, 1956 1 Year $4, 2 Years $7

W. C. Berger Will Head USDA's CSS

WASHINGTON—The appointment of Walter C. Berger as administrator of the Commodity Stabilization Service of the U.S. Department of Agriculture was announced this week by Ezra Taft Benson, secretary of agriculture.

Mr. Berger, former executive president of the American Feed Manufacturers Assn., has been associate administrator of CSS since 1954, and he has been serving as acting administrator since the resignation of the former administrator, Earl M. Hughes, last August.

Clarence Miller was named associate administrator of CSS, succeeding Mr. Berger in that position. Mr. Miller, a Kentucky farmer, has been director of the CSS tobacco branch since 1954.

(Meanwhile, Lloyd N. Case has resigned as director of the grain branch of CSS. See story on page 7.)

In his new position, Mr. Berger will be responsible for administration of price support, commodity, production adjustment, soil bank and related activities of the CSS.

Mr. Benson praised the ability of and called attention to the experience of Mr. Berger and Mr. Miller, and he said that both farm and business experience of these men will give USDA an outstanding team.

Mr. Berger was born and reared on a livestock and grain farm in Iowa and has spent his entire adult life in

(continued on page 4)

ACCENT ON PRODUCTION

In the increasingly competitive feed business and with costs continuing to climb, efficiency of feed production assumes greater and greater importance. In this issue of Feedstuffs, special feature articles provide new information, comments and suggestions on some of the trends and developments in feed plant design and various phases of feed manufacture, including small as well as larger mills. This material on feed production is particularly timely now in view of the attention focused on the subject by the big Midwest Feed Production School being held Dec. 3-5 in Kansas City. The index below includes a list of the production features.

USDA Policy Decisions Await Referendum Vote; Corn "Dumping" Denied

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—U.S. Department of Agriculture decisions on farm policies are being held in check pending the outcome of the forthcoming referendum on corn price supports for 1957. At the same time the USDA is under attack from "news" sources charging that USDA officials have planned to drive down feed grain prices as soon as the corn referendum vote has been registered.

Such reports are incorrect and are believed to reflect a stimulated campaign, possibly inspired by National Farmers Union interests, to defeat the drive of USDA to gain approval of the base acreage allotment of the soil bank for the 1957 corn crop. This referendum will be voted upon Dec. 11.

Here are approximately the facts of policy thinking by leading USDA officials:

First, the cornerstone of the 1957 feed grain price support level must be measured in terms of the possible outcome of the corn referendum. This referendum provides two choices for the farmers in the commercial Corn Belt. They can, on one hand, select the provisions of the existing law with an acreage allotment of 37 million acres which will grant cooperators a level of support at $1.36 bu. If they wish to obtain soil bank payments it will be necessary for them to reduce that corn base acreage by 15% by land contributions to the acreage reserve program of the soil

(Continued on page 8)

Feed Interests Fight Bid For Higher Railroad Rate

By THOMAS E. LETCH
Feedstuffs Editorial Staff

KANSAS CITY—Feed and grain interests were represented here this week at the Interstate Commerce Commission hearing on a petition by eastern and western railroads for a 7% emergency freight rate increase. Stiff opposition to the increase was expressed.

A statement filed by Oscar Straube, board chairman of the American Feed Manufacturers Assn., represented the position of that organization. In addition, statements of opposition to the rate boost were filed or were to have been made by Ray Cox, Kansas City traffic consultant, on behalf of the American Dehydrators Assn. and the North American Trading & Import Co. (buyer and seller of blackstrap molasses), by Ed P. Byars on behalf of the Texas Cottonseed Crushers Assn. and the National Cottonseed Products Assn., and by Walter R. Scott, executive vice president of the Kansas City Board of Trade, on behalf of most major terminal grain markets, major grain dealers, millers and feed dealers, various milling and elevator companies, the Midwest

(continued on page 4)

What's the Feed Business Picture for '57?

Here It Is: The Livestock, Poultry, Feed Outlook

WASHINGTON—What's the feed business outlook for the coming year? In general, of course, prospects depend on the volume of livestock and poultry production and the prices producers receive. Livestock production and slaughter will ease a little but will remain big, according to the U.S. Department of Agriculture. Production of poultry products probably will top this year's record highs. Milk cow numbers will continue stable, but output will rise. Grain and other feed supplies will be record large, with the total amount fed dipping a little. Price ratios are expected to be relatively favorable for dairymen and hog and cattle feeders. Poultry product prices will continue low relative to feed, reflecting in part the increasing feed efficiency. Details will be found in the accompanying stories and in dairy and feed outlook stories on pages 8 and 109.

— POULTRY —

Production of eggs, broilers and turkeys in 1957 is likely to exceed the record levels being established for these commodities in 1956. With the possible exception of broilers, prices for these commodities are likely to average a little lower in 1957 than in 1956.

That, in general, is the way USDA sees the outlook for the feed industry's biggest customer—the poultry industry.

LAYERS AND REPLACEMENTS: The laying flock the first half of 1957 may be about the same size as a year earlier. In the second half of the year, the flock may be smaller than during the same period of 1956 because of a possible reduction in number of replacement chickens to be raised.

A further increase in the rate of lay is expected, however, and this will offset effects of smaller flock size. As a result, egg production on farms in 1957 is likely to exceed slightly the record output of 169 million cases expected in 1956—the margin may be about 2%.

The number of potential layers on

(Continued on page 109)

— LIVESTOCK —

Livestock production and slaughter will continue large in 1957, USDA indicates, but it will ease a little below the 1956 record volume.

Hog slaughter will be less than in 1956, following cutbacks in pig crops this year, but the decrease in pig crops may halt and farrowings may be close to 1956.

Over-all cattle numbers are currently stable and may show little change. Numbers are being decreased in the driest areas but increased in other areas. Fully as many cattle may be slaughtered in 1957 as in 1956, but weights will be lighter. The number of fed cattle will likely be larger.

With slaughter down, hog prices in 1957 will be higher than in 1956. Cattle prices are expected to stay above their lowest points of 1956 and may average slightly above that year.

BEEF CATTLE: The cyclical uptrend in numbers of cattle and calves on farms has come to a halt, USDA points out. Numbers are at a point of balance, poised to swing either way. Almost the same number of

(Continued on page 109)

FEEDSTUFFS *Features This Week*

FEED PRODUCTION: Several articles this week deal with new developments and trends in feed manufacturing operations:

Trends in Feed Processing 20
New Automatic Plant 32
Modern Material Handling 36
New Mill Hikes Output 44
Effective Cost Control 56
Custom Mill Design 113

OTHER FEATURES: Dr. S. M. Weisberg, on **page 75**, reports research indicating eating quality of poultry is improved when ration is supplemented with milk products. Effective sales methods are outlined on **page 84**. Articles beginning on **page 87** tell of progress made in aeration of grain.

Up or Down 10
Convention Calendar 51
Joe Brooks 62
Camera Views 74
Putting Research to Work 77
Ringing the Cash Register 80
Worth Looking Into 102
Classified Ads 106
Feed Markets in Detail 110
Index of Advertisers 115

★ FEEDSTUFFS ★

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Quality Testing Program

SOME highly interesting work in evaluating formula feeds is being done in Indiana under the supervision of Dr. F. W. Quackenbush of Purdue University, Lafayette. Dr. Quackenbush is the Indiana State Chemist and has served in many important activities in the Association of American Feed Control Officials, including its presidency.

The Indiana program of biological testing of commercial chick rations has been carried on for several years, which gives it added meaning. It has been publicized a number of times, and is worth reviewing each year as findings are brought up to date.

Reporting at the recent annual meeting of the Animal Nutrition Research Council in Washington, Dr. Quackenbush said that the procedure has now been so far developed that its use is routine in his department. It is based on a comparison of the usual state inspection sample with the reference diet of the ANRC when each is fed to a single male chick for a period of five weeks. Dr. Quackenbush believes that this provides "an effective and comparatively inexpensive additional means of evaluating commercial feeds."

Probably most feed manufacturers are familiar with the ANRC reference chick diet. It was developed by a committee of the Animal Nutrition Research Council as a positive control diet in experiments with chicks and broilers, to be used as a reproducible reference or standard comparison of results within a laboratory or from different laboratories. The diet is designed, first, so that it can be readily duplicated insofar as is practical and, second, to give what might be considered a "normal" growth rate and feed conversion with the restrictions involved in selecting a formula with a minimum of variability of ingredients.

The formula and its calculated average analysis are shown in a box on this page.

★ ★ ★

IN the procedure employed in Indiana, a sample of commercial feed picked up by a state feed inspector is fed to a single male chick for a period of five weeks. Other samples of the same brand of feed, obtained at different locations, are fed similarly, and in each case a parallel group of birds is fed the reference diet. Dr. Quackenbush reports that under the standardized conditions employed chicks on the reference diet show a coefficient of variation of less than 10%. Five-week gains in weight are expressed as a percent of the simultaneous gain on the reference diet.

In the Indiana tests with 496 chicks on 223 brands of commercial feed, 22% of the feeds produced "superior" results, i.e., gains exceeding the gain on the reference diet; 25% produced "inferior" results, or gains less than 85% of the gain on the reference diet. By a system of sequential analysis feeds are thus being rated as having "superior," "inferior" or currently indeterminate quality. In some cases with grossly inferior feeds, reliable ratings can be made with as few as three chicks, according to Dr. Quackenbush. In others, near the 85% or 100% performance, as many as 15 chicks may fail to provide a decision.

Results are not made public, but are available to each manufacturer on his own brand of feed.

Such a limited test would not be conclusive, of course, but it may furnish a criterion for evaluation that, considered with reservations, would guide feed manufacturers in upgrading their product.

The Indiana work does demonstrate that there are substantial differences in the growth and feed efficiency which different brands of feeds are capable of producing under identical conditions.

It might be argued, of course, that there is a place for "inferior" feeds under certain conditions. Some feeders may prefer a feed of lesser efficiency or giving a lower rate of gain, providing the price of the feed reflects its true quality and it is not sold on exaggerated claims or other misrepresentation. There have been times—during the drouth and depression of the 1930's, for instance—when only a "cheap" feed could be sold. Few feeders were willing to pay for quality.

It is always true that not everyone wants a $30 pair of shoes if a $10 pair is available, regardless of differences which would justify the price spread. But feed efficiency more and more is recognized by feeders as the dependable road to profits. We believe that feed quality will continue to improve and it will become increasingly difficult to build business solely or principally on a low selling price.

The final test of a feed is how it performs on the farm. That is what the Indiana tests attempt to indicate.

FORMULA FOR REFERENCE CHICK DIET

	Per 100 lb. (pounds)	Per Ton (pounds)
Yellow corn, ground (grade No. 2)	60.70	1214
Hulled soybean oil meal, 50% protein, minimum	27.98	559.6
Dehydrated alfalfa meal, 17% protein	2.00	40
Condensed fish solubles (50% solids)	2.50	50
Dried whey-product 50% lactose	2.50	50
DL-methionine	0.05	1
Calcium carbonate (or limestone) 38% Ca	1.60	32
Dicalcium phosphate (20% P, 24% Ca)	1.75	35
Trace mineral mix (Delamix)	0.10	2
Salt	0.50	10
Vitamin A, stabilized (4000 IU/gm.)	0.20	4
Vitamin D_3 (1500 IU/gm.)	0.05	1
Choline chloride	0.07	1.4
TOTAL	100.00	2000.0
Riboflavin	150 mg.	3 gm.
Calcium pantothenate	250 mg.	5 gm.
Niacin	1.5 gm.	30 gm.
Vitamin B_{12}	0.3 mg.	6 mg.
Alpha-tocopheryl acetate	200 mg.	4 gm.
Vitamin K (Menadione)	100 mg.	2 gm.
Procaine penicillin G	200 mg.	4 gm.
Arsanilic acid	4.5 gm.	90 gm.

Calculated Average Analyses

Protein, %	21.2*	Niacin, mg./lb.	30.2
Fat, %	3.9	Pantothenic acid, mg./lb.	6.9
Crude fiber, %	2.5	Choline, mg./lb.	780
Calcium, %	1.18	Vitamin B_{12}, micrograms/lb.	5.5
Phosphorus, total, %	0.74	(B_{12} added)	3.0
Phosphorus, available, %	0.49	Methionine, %	0.45
Phosphorus, inorganic, %	0.38	Lysine, %	1.05
Vitamin A, IU/lb.	5728	Tryptophane, %	0.23
(from stabilized A)	3628	Arginine, %	1.17
Vitamin D, ICU/lb.	340	Productive energy, Cal./lb.	902
Riboflavin, mg./lb.	3.14	Energy/protein ratio	42.5

*Based on corn with 8.5% protein and soybean oil meal with 51% protein.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Formula feed demand reflected a healthy seasonal upswing in several areas this week, but in some sections volume held about steady. On the whole, however, indications were that normal winter feeding operations were getting well under way, and the outlook for improvement in sales was considered good by most observers. Cattle feeds are prominent in the demand picture, with poultry feed business coming along better and hog feed sales still lagging behind expectations. Markets were mostly firm, and the index of wholesale feedstuffs prices advanced .2 point to 82.4 while the feed grain index gained .9 point to 77.6 in the week ending Nov. 28. (Ingredient details on pages 110-112.)

Southwest

Most mills in the Southwest report formula feed business about the same as last week—just so-so—although some mills are keeping very busy.

Hog feed is moving some better. This may be due to the winter weather in some areas which has forced farmers to bring in hogs off corn fields and start feeding them formulated feed.

Poultry feed business varies. Some mills report a slight upswing on egg mash sales, while others say this improvement has not yet arrived. Broiler feed seems to be holding up fairly well, despite the low feeding ratio and the continuing high replacements. Once the broilers are started, they have to be fed, sales departments explain. The lack of turkey feed business now that most birds have been marketed, has cut into the over-all poultry feed production quite sharply at some mills.

Cattle feed sales are steady, with the local type mills getting the large share of the drouth feed business. Dairy feed demand is unchanged.

Production this week in the Southwest has ranged from 5½ days of three shifts a day to 4½ days of two shifts a day. Some mills worked last Saturday to make up for Thanksgiving. Orders were not particularly plentiful for most mills, with very little backlog having been built up for next week. However, the orders seem to arrive at the last moment to keep the mills busy.

Prices are steady to possibly 50¢ higher, mills report.

The erratic Texas feed business turned considerably better this week, with the cattle feed volume improving and taking up any slack from the fall-off in turkey business. Volume is said to be ahead of last year. Broiler feed continues to sell at a good pace, despite the low 15@16¢ lb. broiler price and the continued

(Continued on page 114)

3 WAYS to make a good feed better!

FLAVORSTAT ANIFEED BHT ANTIOXIDANT FLAVORS

(Patents Pending)

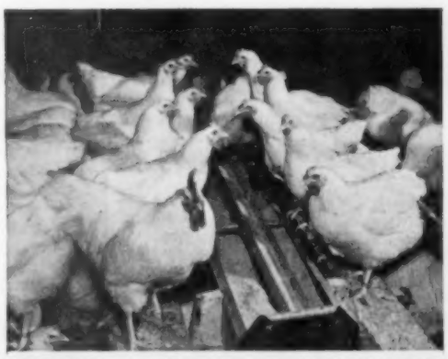
New ANIFEED FLAVORSTAT flavors make any good feed better—and keep it better until the sack is empty—by eliminating unpleasant rancidity odors and masking the unpleasant taste of medicinal and chemical additives. They may also improve the taste of meat and dairy products by preventing absorption of "off flavors" of feeds by body tissues.

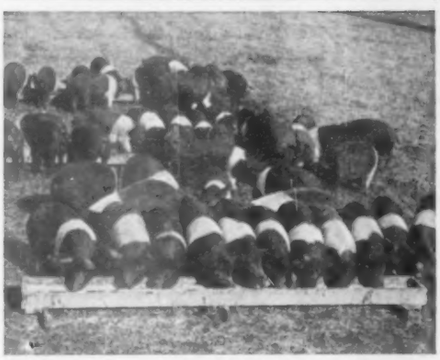
ANIFEED FLAVORSTAT adds taste appeal and lasting palatability to feed, and prevents loss in potency of vitamins which prevent many of the deficiency diseases of livestock and poultry, such as poor growth, reproductive failure, reduced hatchability of eggs, "enlarged hock disorder" in turkeys and encephalomalacia or "crazy chick" disease.

1 POULTRY-JOY

CHICKEN & TURKEY FEED FLAVOR

Imparts an unusually distinctive flavor to Poultry and Turkey feeds that the birds prefer to any other, as proved in free-choice feeding tests. Equally important, *Poultry-Joy Flavorstat* preserves the outstanding flavor and aroma of the feed during storage. *You owe it to yourself—try it soon!*

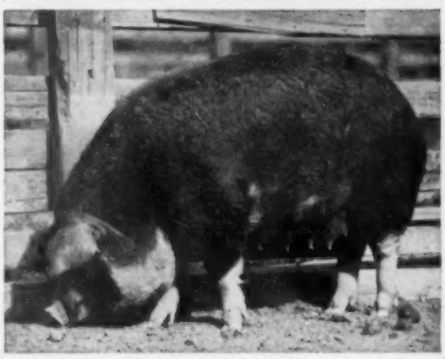




2 SWINE-JOY

PIG STARTER & HOG FEED FLAVOR

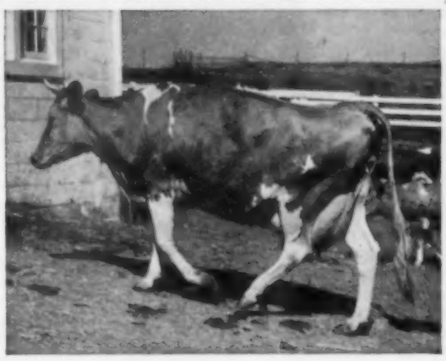
For use in the finest "sweet tooth" types of Pig Starter feeds, *Swine-Joy Flavorstat* is unsurpassed. For Grower and Fattener feeds, the use of this flavor (without sugar) is a "must" for taste appeal and *lasting* palatability. *Find out for yourself—send for a trial size order today!*



3 SESSALOM

MOLASSES FEED FLAVOR

Economical *Sessalom Flavorstat* boosts and stabilizes molasses flavor and aroma at the lowest possible cost. It is also outstanding for use as a solo flavor in all Calf Starter, Dairy Cattle and Beef Cattle feeds without molasses. *Send for a free sample or small trial order—discover how superior this molasses flavor booster really is!*



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Alfalfa Meal Production Down 18% From Year Ago

KANSAS CITY — Dehydrated alfalfa meal production in October amounted to 93,200 tons, it is reported by the U.S. Department of Agriculture. This compares with 116,600 tons produced in October of last year.

For the current season — April through October—USDA reports that production has totaled 911,300 tons, compared with 1,120,600 tons in the same period a year ago. This is more than an 18% decrease in production.

The American Dehydrators Assn., using USDA figures to calculate disappearance, concludes that disappearance in October amounted to 10,400 tons, or 2,600 tons more than disappeared in the same month a year ago. This represents the first month for this season (ADA calculates on a May-October basis) in which disappearance topped that in the same month of a year ago.

ADA figures for the May-October period show a total disappearance of 640,200 tons, about 64,500 tons below the total for the same period in 1955.

USDA reports that stocks of dehydrated alfalfa meal at producing plants Oct. 31, 1956, amounted to 363,800 tons, compared with 380,200 tons on Sept. 30 and 466,500 tons on Oct. 31, 1955. As against a year ago, stocks were down 22%.

Suncured alfalfa production has totaled 101,800 tons in the period April-October, compared with 111,200 tons in the same period a year ago, according to USDA. Stocks on hand Oct. 31, 1956, totaled 5,800 tons, compared with 4,400 tons on the same date a year ago.

Trade interests, comparing stocks on hand with likely disappearance during the coming months, see a bullish trend continuing in the dehydrated alfalfa market. In the 1955-56 season, from November through April, disappearance amounted to 425,200 tons, according to USDA figures. This figure exceeds stocks on Oct. 31 this year.

Some dehydrated alfalfa is produced during the winter months in California and Arizona, but at the current price and freight rate, this production is not likely to move east, it is pointed out.

RAIL RATES

(Continued from page 1)

Feed Manufacturers Assn., and other feed and grain interests.

Mr. Scott testified that the increase would divert grains from rail traffic and would disrupt the traditional marketing, milling and distribution systems. He said many grain exchanges were faced with disaster unless diversions from rail traffic are stopped.

"We feel rates have reached the point of being decidedly unreasonable," he stated.

He presented exhibits to show how grain has been diverted to barge and truck lines in the past five years.

Other testimony was introduced by Mr. Scott to show that the market price per share of 25 railroad stocks had increased from $33.60 in 1950 to $70.21 in 1955 as compared to an increase of from $31.23 a share to $49.24 a share for 24 utilities in the same period. Another exhibit showed that percentage of yield on investment had declined on the same railroad shares from 6.5% in 1950 to 4.88% in 1955 as compared to a decline in utility shares from 5.66% to 4.5%.

AFMA Position

Mr. Straube's statement of the AFMA position urged that if ICC should authorize any or all of the requested 7% emergency increase and do as it has done in the past on increasing grain and grain products rates lesser amounts than other products, the lesser increase be applied on all commcdities accorded grain and grain products rates (including mixed feed).

Ray Cox stated that "it is the position of the American Dehydrators Assn. that no increase should be authorized on the movement of dehydrated alfalfa meal and that any increase whatsoever will result in further diversion of this traffic to other modes of transportation. It is also the position of the association that if any increase is authorized, it should not exceed the increase authorized on grain and grain products and should be further subject to a maximum."

Mr. Cox's statement on behalf of the molasses company pointed out that railroads recently reduced their rates from the New Orleans district to Western Trunk Line territory with the result that an enormous amount of molasses had turned to rail movement that had previously moved by barge and truck.

"If increased rates result in a diversion of traffic to other modes of transportation, it is axiomatic that the revenues of the rail carriers will not be increased to meet their increased expenses," he said. For those reasons, he said it was the position of the North American Trading & Import Co. that rate increases should not be applied to the rate on blackstrap molasses from the New Orleans district to Western Trunk Line territory.

Higher Costs to Farmer

Mr. Cox also reminded the commission that the farmer is unable to pay higher costs which would be passed on to him in feed if the molasses price is increased.

Telling of the farmer's inability to pay higher costs was Dr. Don Paarlberg, assistant to the secretary of agriculture.

"Agriculture is a relatively depressed industry compared with the rest of the economy," Dr. Paarlberg said. "The railroads may need more income, but we seriously doubt whether the public welfare would best be served to allow them to increase their freight rates on agricultural products and farm supplies."

Other witnesses testifying along these lines included Charles Marshall, Avoca, Neb., director of the American Farm Bureau Federation, and C. B. Funderburk, Atlanta, director of the National Council of Farmers Cooperatives.

The hearing has been going on all week, with some 400 attorneys and representatives of railroads and shippers present to bring their cases before the federal body. The entire ICC body will be here next week to hear arguments on the testimony presented this week. Once the arguments are completed, the commission is expected to take the question under advisement and announce a decision before Dec. 15.

At the stake at this hearing is the 7% "quickie" increase in freight rates asked by the eastern and western railroads. A hearing for the increase for southern roads is scheduled for Jan. 7. Another hearing has been scheduled to start Feb. 25 at which time arguments will be heard on eastern and western railroads' request for a 15% increase.

As opposition to rate increases came from all sections of the U.S., some clarification of the picture was provided in Washington by ICC when it ruled that the request for a 7% increase was part of the 15% request previously made by the eastern and western roads. Traffic men suspected that the 7% rise would be over and above the 15%. In some quarters it is felt that the operators might still amend their petitions in an effort to get a total of 22%.

Railroad officials say that the carriers don't intend to press for the full rate increase for agricultural commodities.

CAPITAL COMMENT

By John Cipperly

WASHINGTON — The feed industry really came of age this week when Ezra Taft Benson, secretary of agriculture, appointed Walter C. Berger to be his director of the Commodity Stabilization Service.

The appointment of Walt Berger, with his feed industry background, is little less than recognition that the feed industry is a cornerstone of the prices of the market basket that the consumer picks up at the big super market today.

Had it not been for the feed industry—with its adoption of new feeding developments, and the consequent increased efficiency in livestock and poultry production—it is unlikely that the consumer market basket could have been kept within price bounds as population and incomes of all wage earners rose.

Walt Berger now assumes the top post in CSS, which has previously been held by James McConnell of the G.L.F. and Earl Hughes. The Berger promotion is in line with the previous high standards of the top CSS spot. Prior to his resignation, Mr. Hughes told this reporter that he would like to see Mr. Berger succeed him in that spot.

Walter C. Berger

Referring to Mr. Berger, no less than the Secretary of Agriculture said in making the appointment that "USDA is fortunate in having the service of this man with the ability and experience that he has."

After the announcement was made, Mr. Berger told this reporter that he saw in the appointment a confirmation of the big spot that the feed industry has in the farm program and in the cost of animal agriculture products to the consumer.

Another optimistic note in the USDA announcement is the promotion of Clarence Miller of Kentucky, recently director of the tobacco branch of CSS, to position of associate director of CSS.

This appointment is a very favorable move for trade and other circles.

• • •

A Big Week for the Walter Berger Family

WASHINGTON — This week has been "Berger Week" in a big way. None other than the well known former feed industry executive, Walt Berger, made the news with his advancement up to head the Commodity Stabilization Service.

But vying for honors is Walt's younger son, Bruce, whose picture above shows a prize blue fish catch in the Chesapeake Bay here recently. Bruce landed this big fellow on the weekend following completion of his vacation period training session at a Ralston Purina Co. plant in the Delmarva broiler area.

Another gold medal winner in the Berger clan is Walter's older son, Brook. This lad was nipped by an attack of polio several years ago. Bravely, however, he overcame this handicap and pitched in at the University of Arizona to gain a degree there. Now, since the Berger family is located in Maryland, he has undertaken studies at the American University here, working for a doctor's degree in transportation. Brook also has been doing summer vacation work for the past two years in Florida with the St. Regis Paper Co. and this past summer at the Archer-Daniels-Midland Co. main office in Minneapolis.

It is appropriate to mention that the distaff side of the Berger family highly approves of the recent promotion of Walter to the top spot in USDA's CSS. The well-being of the Berger family must in great part be attributed to Mrs. Berger, with the capable assistance of her daughter, the baby of the family, little Margaret.

BERGER

(Continued from page 1)

agricultural production and public and commercial service work.

After completing his studies at Iowa State College in 1925, he was engaged for 10 years in sales and management work in the feed, flour and poultry industries. He owned his own business in Des Moines, the Des Moines Oat Products Co., from 1935 to 1948 and operated it personally during most of that time. During the war years (1943-46) he served as director of the feed management division of the War Food Administration in Washington.

From 1946 to 1952, Mr. Berger was president of the AFMA. He then served as executive vice president of the Shea Chemical Corp., Baltimore, before beginning his second period of government service in 1954.

John Burrell Resigns Crete Mills Position

CRETE, NEB.—John Burrell has resigned as general manager of the Crete Mills Division, Lauhoff Grain Co., here, it was announced this week. No announcement of an appointment of a successor to Mr. Burrell has been made.

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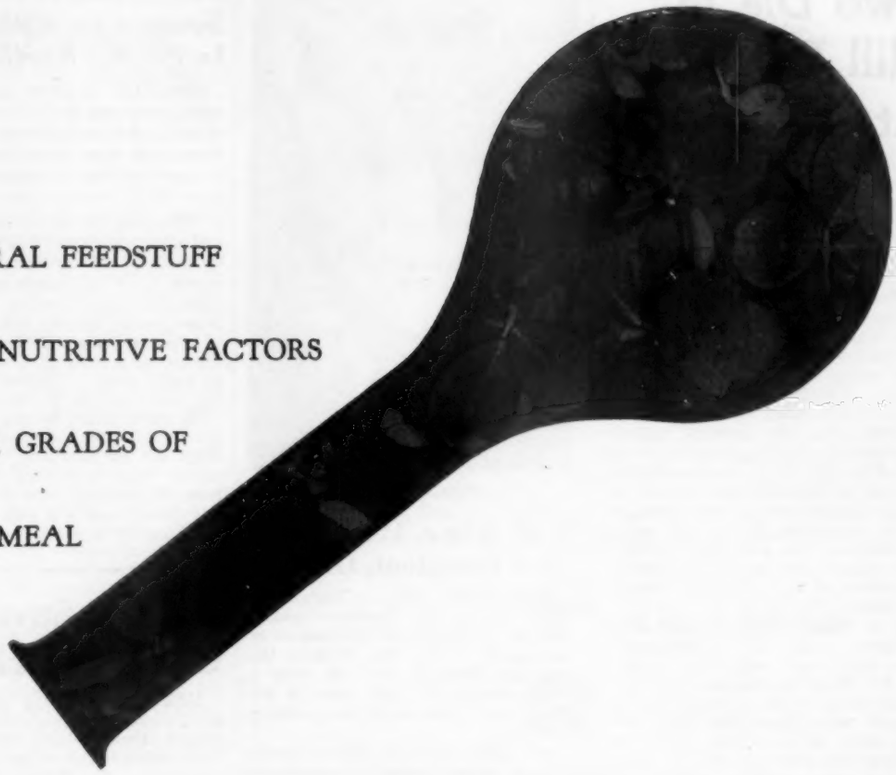

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Two Die in Mill Blast At Dallas

DALLAS—A shattering explosion practically destroyed the Southland Feed Mills' plant in Dallas, killing two men and injuring 14 others, early Nov. 24. The blast, believed to have been started by a dust explosion in the elevator, rocked a large section of North Dallas.

The explosion occurred at 3:40 a.m. while a 17-man night crew was at work sacking and loading feed. The bodies of William B. Brown and Eugene Childs were found in the ruins of the plant. Several of the 14 injured men were severely burned.

Officials of the company said that the plant was almost destroyed. Some of the concrete elevator tanks remain standing and are being inspected to determine if they are sound. A portion of the warehouse facilities also escaped destruction. Preliminary estimates of loss indicated damage of around $750,000.

E. B. Royce, sales manager of the company, said that arrangements have been made with other mills in the Ft. Worth-Dallas area and associated mills elsewhere to supply customers with Southland feed products until the plant can be rebuilt. Preliminary work has already begun toward reconstruction, which it is hoped can be completed by next summer.

Monroe May is the manager of Southland Feed Mills, which is owned by the Southland Cotton Oil Co. In 1955 Anderson, Clayton & Co. purchased 86% of the stock in the Southland Cotton Oil Co.

Winter Storage Fleet Begins Loading Grain

BUFFALO, N.Y.—The loading of grain cargoes for winter storage at Buffalo has started, and it is likely that the port will have a smaller fleet than at anytime in recent years. Unless there are last minute charter changes, the fleet will total less than 50 ships.

Grain men say there appears to be no heavy demand for storage space, at least not now, while a major portion of the bulk fleet is carrying ore and trying to makeup a 12-million-ton deficit incurred by the midsummer steel strike.

The prevailing rate for winter storage space is 14 and 15¢ bu., slightly more than a year ago. One industry spokesman termed the situation as "not good," and explained that many fleet owners are reluctant to winter their boats at Buffalo because of inadequate inner harbor mooring facilities. Owners like to moor to an inside dock so that company personnel may effect ship repairs at reduced costs, the spokesman said.

Owners are unable to make such repairs economically if their craft are forced to winter at the Buffalo breakwater. The result is, said the spokesman, that operators must be shown an inner dock for mooring before they will offer their boats for grain storage.

Another reason for the lack of ships for storage is the fact that there was a heavy rush of grain shipments throughout the summer, and Buffalo elevators are filled almost to capacity, with more than 26.5 million bushels of grain.

EXPANDED PORT FACILITIES

MOBILE, ALA.—Bids have been accepted for the enlargement of the Alabama State Docks here. Three new shipping berths are contemplated. The docks department also is acquiring two tracts of land on the Tennessee River and is planning to enlarge the grain elevator here.

Bernie P. Kline

B. P. Kline, Honeggers' Vice President, Dies

FAIRBURY, ILL. — Bernie P. Kline, 56, a vice president and a member of the board of directors of Honeggers' & Co., Inc., died at the Fairbury Hospital Nov. 24 from a heart attack. He had been ill for about four weeks from a kidney operation.

Mr. Kline, who was widely known in feed circles, joined Honeggers in 1951 as general mill superintendent. He was elected a vice president in 1954 and made a member of the board of directors in September of this year. He had been most active in many committee and staff functions for the Honegger organization outside of his normal work assignment area.

Prior to joining Honeggers, Mr. Kline served 31 years with Hales & Hunter of Chicago, the last 16 as general mill superintendent. Mr. Kline was active in feed trade association work and had appeared on many programs, including the production school program of the Midwest Feed Manufacturers Assn. in Kansas City.

Mr. Kline was born in Chicago. He married Hazel Brede in Chicago in 1921.

Protein Oil Meal Prices Move Up

MEMPHIS, TENN. — Protein oil meal futures moved up on the Memphis Board of Trade for the week ending Nov. 29. The market firmed on trade buying.

Export demand for November and December helped give soybean oil meal a better tone.

Solvent cottonseed oil meal was higher, particularly in December, due to the strong nearby situation. The demand is sufficient to take care of production. Trading was light at Memphis during the week.

Sales at Memphis for the week amounted to 36,700 tons of unrestricted soybean oil meal; 800 tons of Eastern Trunk Line soybean oil meal; and 3,200 tons of bulk cottonseed oil meal. No sacked cottonseed oil meal was traded.

Sorghum Freight Charges to Be Lower

FT. WORTH — Freight rates on sorghum grains from southwestern origins to Arizona and California will be 5% lower, effective Dec. 17, 1956, railroads have announced.

This further reduction is the equivalent to the removal of the X-196 increase. The new rates will be 86¢ cwt. from Groups G and H (except a small portion of H which adjoins Group I and which takes 83¢) and 80½¢ from Groups I and J, plus the 3% transportation tax.

Export Sales Put Squeeze on Millfeed In Pacific Northwest

SEATTLE — Trade sources this week confirmed that about 5,000 tons of millfeed have been sold by Pacific Northwest flour mills for shipment to Japan within the next 60 days or so.

This, plus an already strong local and California market, has tightened up the millfeed situation to the point where most shipments on domestic contracts are running a week to three weeks behind schedule. Most of the Japanese business was confirmed at a level of about $46 ton, alongside ship, at Portland and Seattle, and several Pacific Northwest mills participated in the sales. Millers expect the current squeeze to slack off by the first of the year, unless there is further export business, because the flour grind is holding up well and it is just a matter of catching up on the backlog of orders.

Demand Strong for Cottonseed Hulls

MEMPHIS — Strong demand for cottonseed hulls continues from the drouth areas of Texas and Oklahoma, trade sources here report. Bulk hulls are selling for around $31 ton at drouth area points, with the market firm and buyers active in purchasing this type of roughage feed. Meanwhile, less well known feeds of similar character are offered at lower prices, Memphis dealers report. Ground corn cobs, which have outproduced cottonseed hulls in a number of cattle feeding trials at state experiment stations, are offered in the drouth area from Memphis at approximately $26, delivered.

S.D. Elevator Group to Meet

ABERDEEN, S.D.—The Farmers Elevator Association of South Dakota will hold its annual convention Dec. 3-4 at Huron.

Speakers will include Lloyd N. Case, director of the Commodity Stabilization Service grain branch; Ray B. Bowden, assistant to the president of the Grain & Feed Dealers National Assn., and Carl E. Bahmeier, Jr., secretary of the South Dakota Bankers Assn.

A special feature will be a discussion of the so-called county assessor law, passed during the 1955 legislative session, which has been the subject of much study and debate. Legislators serving on a special tax study committee studying the law as it relates to tax laws will appear on the convention program. They are Sen. Albert Risty, Corson, and Rep. Robert Chamberlin, Hecla.

Supplier and service firms will be hosts at a buffet and entertainment program Dec. 3.

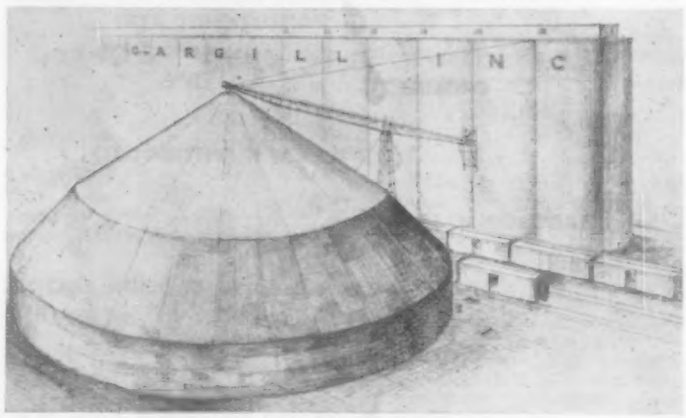
Automatic Unloader

BUFFALO — The Pennsylvania Railroad has started preliminary work for installation of a new machine for push-button dumping of grain from railroad cars at the Connecting Terminal grain elevator on the City Ship Canal.

The electronic machine will greatly speed the work of unloading grain-laden railroad boxcars, virtually doing away with hand labor.

The machine actually will lift the boxcars and turn them sideways to dump the grain. The grain will be carried by conveyor from the pit to various elevator bins. Last year an automatic boxcar unloading machine was installed at the Standard Milling Co.'s St. Clair St. elevator at a reported cost of more than $100,000.

Fiber Glass Sheaths New Elevator



Cargill President Designs Unique Structure

TOLEDO—A pilot plant grain elevator of unique design—a single-bin structure of concrete, steel and heavy gauge fiber glass—was announced here by Cargill, Inc.

The structure, which its builders say may revolutionize future grain storage, will be built in connection with Cargill's present 3 million-bushel elevator at Maumee, a suburb of Toledo. Ground clearing is already complete and initial construction has begun.

John H. MacMillan, Jr., president of Cargill and designer of the unit, said, "a flexible fiber glass roof will be supported by pneumatic pressure while the elevator is being filled or emptied. At other times the roof can be supported at any level by the pile of grain in storage."

The new Maumee installation will be a circular building 200 ft. in diameter and 100 ft. high. It will have an air-tight, waterproof concrete floor, solid steel sides 54 ft. high and a giant cone of woven fiber glass extending upward 46 ft. to a peak at the center. The flexible glass material, which has a tensile strength greater than an equal thickness of steel, is capable of supporting test weights of more than 575 lb. from a 1-in. strip.

The entire elevator structure will be air-tight, and grain will enter through an opening at the top which will permit its downward passage but will prevent the escape of inside air pressure.

Mr. MacMillan, who 22 years ago obtained the basic patent on "air supported" stuctures, built at that time an experimental elevator on which a galvanized iron roof was held up by air. The weight and cumbersomeness of the metal, however, caused shelving of the idea until a more suitable roofing material could be developed.

The unit, when completed, will result in excellent all-weather protection of farmers' grain at a greatly reduced cost per bushel, according to the company.

Lloyd N. Case

Lloyd Case Leaves USDA Post to Join Burdick Grain Co.

MINNEAPOLIS — Lloyd N. Case will join Burdick Grain Co. Jan. 1 as vice president in charge of trade relations and research, it was announced this week by A. L. Burdick, president.

An official of the U.S. Department of Agriculture in Washington for the past two years, Mr. Case has resigned from his current position as director of the grain division of the Commodity Stabilization Service, effective Dec. 31.

Mr. Case joined USDA as associate director of the grain division in September, 1954, and he was promoted to director in January of this year. Previous to his term of government service he acquired wide experience in all phases of grain production and marketing, including a number of years of service as a trade association executive.

Born in 1902 in Del Norte, Colo., Mr. Case was reared on a Montana wheat farm. As a young man he returned to Colorado where he supervised farming operations and engaged in operating flour mills and grain elevators at Montrose and Durango. Beginning in 1943 he served as secretary of the Colorado Grain, Milling & Feed Dealers Assn. as well as of the Colorado Wheat Growers, the Colorado Wool Growers and Colorado Frozen Food associations.

In 1950 he went to Minneapolis as secretary of the Northwest Country Elevator Assn. and Minneapolis Terminal Elevator Assn., where he remained until he accepted the USDA position.

As director of the CSS grain branch Mr. Case has been responsible for the formulation and administration of nearly all government grain operations, involving price support, production adjustment, storage and sales.

Purina Announces Award Program

ST. LOUIS—The Ralston Purina Co. has announced its research fellowship awards program for 1957-58, under which 10 outstanding agricultural college students will be assisted in their graduate work.

As in the past, selection of the winning students for the annual awards will be made by a committee of five, composed of representatives of the Poultry Science Assn., American Veterinary Medical Assn., American Dairy Science Assn., American Society of Animal Production and American Association of Land Grant Colleges and State Universities.

Three fellowships will be awarded in poultry husbandry, three in animal husbandry, three in dairy husbandry, and one in veterinary science. Each fellowship amounts to $1,620.

The purpose of the program is to help train outstanding college students for leadership in the science of livestock and poultry production. The first fellowships were granted for the 1949-50 school year.

Among the 44 outstanding college students who have been chosen for Purina fellowship awards during the past eight years, 17 are now professors in colleges of agriculture, two have become heads of their departments, two have become agricultural research specialists, and one is dean of a veterinary college.

Ferrell & Co. Buys Randolph Grain Drier

TOLEDO, OHIO—The purchase of the O. W. Randolph Grain Drier Co. of Toledo by A. T. Ferrell & Co. of Saginaw, Mich., has been announced by Elden Kaylor, president of the Ferrell company. The negotiations were finalized with Mrs. O. W. Randolph, widow of the late O. W. Randolph.

The 40-year-old Randolph line of grain drying equipment will continue to be built and serviced without interruption by A. T. Ferrell & Co. under the trade name of "Randolph."

The Ferrell company manufactures a line of grain, seed and bean cleaning machines under the brand name "Clipper." Mr. Kaylor states that the Ferrell company engineers have combined forces with the retained Randolph company engineers in the interest of searching out new refinements and improvements in the effective drying of grain.

St. Louis Club Holds Annual Dinner Dance

ST. LOUIS—More than 150 members of the St. Louis Milling & Grain Club and their wives attended the annual dinner dance at the Hotel Chase on the evening of Nov. 24. A number of guests went home with valuable door prizes.

USDA Curbs Buying Program

WASHINGTON—The U.S. Department of Agriculture halted its buying of lard, turkeys, eggs and hamburger meat this week.

The USDA buying program reportedly has accomplished expected results in stabilizing prices for these commodities and is no longer necessary to protect producers.

According to the various announcements of USDA for these separate school lunch and institutional programs, the result of USDA procurement has been effective in maintaining better prices than could ordinarily be expected in face of over-production of these commodities.

Prior to halting procurement of these commodities, USDA announced the following purchases:

Nov. 15—1,332,000 lb. of lard, over-all price range 17.89@17.99¢ lb.

Nov. 21—1,152,000 lb. of lard, over-all price range 17.37@17.99¢ lb.

Nov. 15—2,082,000 lb. of turkeys, over-all price range 37.3125@39.50¢ lb.

Nov. 23—360,000 lb. of turkeys, over-all price range 38.50@39.50¢ lb.

Nov. 15—46,818 cases of eggs, over-all price range 34.50@37¢ doz.

Nov. 21 — 45,367 cases of eggs, over-all price range 33.75@36.45¢ doz.

Nov. 15—5,592,000 lb. of hamburger, over-all price range 32.49@33.99¢ lb.

CEA Charges Kansas City Board With Law Violation; Hearing Set

WASHINGTON—The Kansas City Board of Trade has violated the Commodity Exchange Act by seeking to require regular grain elevators to make an official weigh up once a year, according to a U.S. Department of Agriculture ruling. The Commodity Exchange Authority of USDA has notified the Kansas City Board of Trade to show cause at a hearing in Kansas City Jan. 8 why it should not cease and desist in enforcing the rule.

USDA said Bartlett & Co., owner of the River-Rail Terminal elevator, in 1955 tendered to the Grain Clearing Co., an agency of the Kansas City Board of Trade, negotiable warehouse receipts against futures contracts. However, USDA said, the Grain Clearing Co., acting under the direction of the Kansas City Board of Trade, refused to accept the receipts because the firm had not complied with its rule for an annual weigh up.

No provision of the Commodity Exchange Act, USDA said, authorizes the Kansas City Board of Trade to use such a rule.

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K. C. Board of Trade To Oppose Complaint

KANSAS CITY—The Kansas City Board of Trade will oppose the complaint of the Commodity Exchange Authority against the Kansas exchange rules, K. S. Hart, president of the organization, said.

The complaint arose from a protest to CEA made by Bartlett & Co., Kansas City, because the Kansas City futures clearing house refused to accept warehouse receipts of the fed-

(Continued on page 114)

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R – Reliability
U – Uniform Quality
E – Experience
N – Nutritional Quality
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ACE BRAND ROLLED OATS (Steam processed)
WHOLE OAT GROATS
STEEL CUT OAT GROATS
BOLTED OAT FLOUR
GLENWOOD FEEDING OAT MEAL
FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
ENERGEE PULVERIZED OATS
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
STEAM ROLLED WHOLE BARLEY
GROUND BARLEY
PEARLED BARLEY FLAKES (Max. 2½% fiber) (steam processed)
GLENWOOD PEARLED BARLEY
STAR CRACKED PEARLED BARLEY
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ACME GROUND DOMESTIC FLAX SCREENINGS
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Millers TO THE FEED TRADE

FRUEN MILLING COMPANY
MINNEAPOLIS 5, MINNESOTA

SENDOFF — George W. Smith (right) retiring manager of the Archer-Daniels-Midland Co.'s linseed meal department, was the guest of honor at dinner this week attended by nearly 100 friends and associates. Here he is shown receiving a warm handclasp from T. L. Daniels, president of ADM.

George Smith Retires From ADM Position; J. D. Simpson Promoted

MINNEAPOLIS — The retirement of George W. Smith, manager of the linseed oil meal department of Archer-Daniels-Midland Co. was announced this week by R. Bruce, assistant vice president and manager of the linseed division.

Mr. Smith retired Nov. 30 after 19 years of service with the firm. He will be succeeded by John D. Simpson, assistant manager of the department for the past several years.

One of the most widely-known men in the feed industry, he joined ADM in 1938 as assistant to the manager of the feed department and has headed the company's linseed oil meal department since 1947.

Industry Veteran

Mr. Smith got his first job in the feed industry in 1907 when, a boy just out of business college, he went to work in the office of Albert Dickinson Co., Minneapolis feed manufacturing concern. In 1920, after World War I Army service, he took charge of the company's feed business. In 1934 he was named vice president and manager of the feed department of Dickinson Feed & Seed Co., Minneapolis.

Shortly after he became associated with ADM he was appointed manager of the feed department. For several years he managed both the Archer feed and linseed oil meal departments. Since 1947 he has devoted all of his efforts to the merchandising of linseed oil meal.

Long active in feed trade groups, Mr. Smith was president of the Northwest Feed Manufacturers Assn. in 1938-39 and a director of the American Feed Manufacturers Assn. from 1945 to 1948.

Although his retirement plans are not definite, Mr. Smith and his wife, Vivian, probably will continue to reside at their home at 3811 Huntington Ave., St. Louis Park, where he grows prize-winning gladioli.

The Smiths have a son, George, a University of Minnesota student, and a daughter, Mrs. J. D. Williams, Kenosha, Wis.

Mr. Simpson joined ADM in 1938 after attending the University of Minnesota. He worked in the inventory control department until 1940, when he transferred to the linseed oil meal department, where he has filled various sales and management assignments. The Simpsons have two sons, William and James, both at home.

John D. Simpson

USDA POLICIES

(Continued from page 1)

bank or put an equivalent amount of land into the conservation reserve program.

The first soil bank alternative would give the Corn Belt farmer a payment of 90¢ bu. for corn times his average yield per acre. The second choice would involve long-term contracts for taking marginal land out of all field crop production. It would require use of approved conservation practices and in most instances would involve at least a three-year contract.

Other Choice

Under the second alternative offered in the referendum the Corn Belt farmer can approve the base acreage reserve program of the Soil Bank Act. This would fix his base acreage allotment at 51 million acres and give him a price support level of $1.31 bu. if he removes 15% of his base acreage to soil bank contribution. Also, he can obtain soil bank payment from the conservation reserve phase of the soil bank at a much lower level of cash payment.

Using the next corn crop price support level as a basis between $1.31 @1.36 bu. in the commercial Corn Belt, it can only be concluded that price support for the small grains must be dropped to 70% of the parity price for the 1957 crops.

At the same time, it is believed that these price support ideas indicate a price support line for soybeans at not more than 70% of parity.

However, those price support levels in view of the heavy USDA holdings of feed grains do not necessarily indicate any design on the part of USDA to dump feed grain supplies in the domestic market to pull down the price level for animal feeds this winter or coming year.

One USDA official told Feedstuffs this week that the foregoing conclusions are correct and that there will be no dumping of old crop stocks of corn in the domestic market.

This official pointed out that when James McConnell was here as CSS director and later as assistant secretary of agriculture, the data on pork product disappearance eventually convinced him that a soft or low feed grain price did not stimulate any increase in the consumption of pork measured in terms of disposable consumer income.

More Exports Seen

This official also concluded that since Commodity Credit Corp. stocks of corn have been climbing and large stocks of the old crop corn years are getting into questionable condition, it is likely that CCC will be a more aggressive seller of these stocks in the export market. However, it is unlikely that CCC intends to permit heavy movements of CCC corn into the big speculative markets to the extent that it will bust the domestic price wide open.

Another factor worth noting is the price support potential which USDA can yet exercise in the form of supports for noncompliers in the Corn Belt no matter which direction the referendum may take. An announcement similar to that made last year when the USDA put a $1.25 bu. support on corn loans for noncompliers in the Corn Belt is not to be overlooked as a possibility.

It is estimated that CCC may have to offer out-of-condition old crop corn this crop year up to as much as 200 million bushels. This would not be a disastrous price factor in the market, particularly if this corn is aimed at the export market and if it is kept out of the Chicago market, where it would overhang for delivery purposes.

Adjustment Indicated

There will be no deliberate attempt to put cheap feed into the deficit areas. However, with lower price support levels in prospect it is expected that corn prices must move into relationship with new crop (1957) corn at the same time of harvest in 1957. In the interim corn prices may be expected to fluctuate between a current low price and some rise into late winter.

LATE BULLETIN

WASHINGTON — For December, the U.S. Department of Agriculture has widely opened up its sales policy of Commodity Credit Corp. corn stocks for export. The policy for December and probably henceforth is that CCC will make offers of grade corn in unlimited quantities for export. Unchanged, however, is the requirement that CCC will only make deliveries f.o.b. seaboard.

USDA Sees Record Feed Supply, Dip in Amount Fed

WASHINGTON — Another record supply of grains and other feed concentrates and a slight decline in the amount to be fed—that's the general feed outlook for the 1956-57 feeding year, according to U.S. Department of Agriculture reports.

The total feed concentrate supply for 1956-57 is slightly larger than last year, setting a new record of 198 million tons. The number of grain-consuming livestock to be fed in 1956-57 is expected to be about 3 million less than the total of 165 million animal units in 1955-56.

The total supply of grains and other concentrates available for 1956-57 appears to be sufficient to meet total requirements for feed, food, industry and export and leave a carryover into 1957-58 around 10% larger than the record of this year. Ample feed supplies are likely again in 1957-58, even though some further reduction in feed grain acreage seems likely under the soil bank.

USDA says the bumper corn supply for 1956-57 dominates the feed picture. Supplies of each of the other feed grains are smaller than in the previous season. The total supply of high-protein feed is expected to be around 5 to 10% larger than in 1955-56, with the record output of soybean meal in prospect expected to much more than offset a moderate reduction in cottonseed meal.

Feed Prices

USDA expects feed grain prices to average higher this winter and into next spring than in that period of 1955-56, as a result of smaller production, extension of corn price supports to non-complying farmers and higher supports for oats, barley and grain sorghums. However, the seasonal advance in corn prices from November to next summer probably will be less than the 33% rise last season. With a favorable growing season in 1957, feed prices generally may average a little lower later next spring and summer than in the same period of 1956. Because of the larger supply, prices of high-protein feeds may average lower in 1956-57 than the past year.

The total hay supply for 1956-57 is only slightly smaller than the big supply last year, although supplies are short in dry areas.

Larger carryover stocks and a record yield of corn per acre in 1956 increased the total feed concentrate supply for the 1956-57 season to 198 million tons. However, the number of grain-consuming livestock units to be fed will be down.

With the big feed supplies this year, the rate of feeding per unit may be about the same as the .8 ton in 1955-56. In this event, a total of about 130 million tons of feed concentrates would be consumed in 1956-57, compared with 131.8 million the previous season.

The big 1956-57 feed grain supply is fairly well distributed over the country, but supplies on farms are short in a number of states in the western Corn Belt and Southwest and total supplies are down in the south central and western regions.

By-Product Feeds

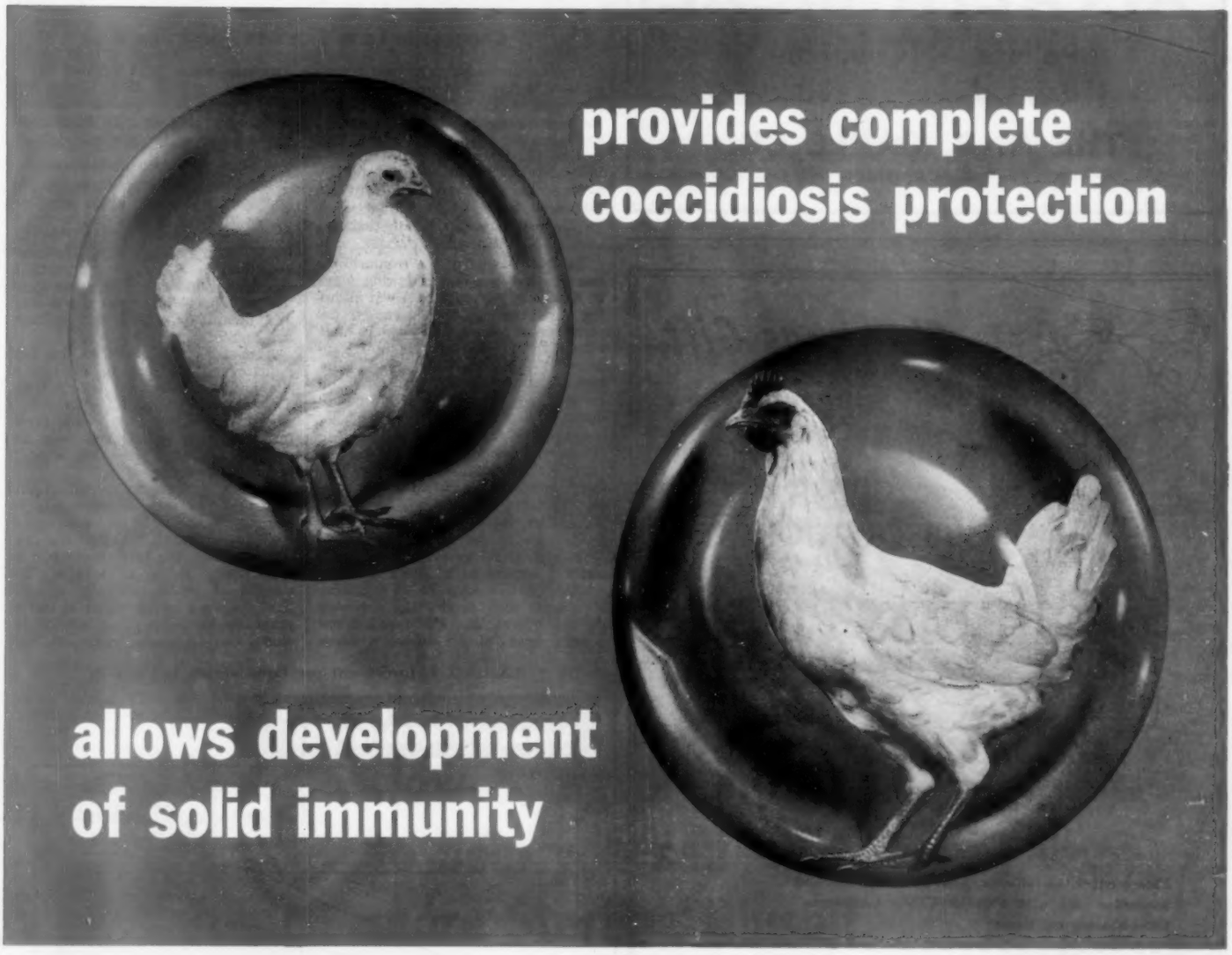
The total supply of high-protein feeds available for feeding in 1956-57 may be around 7% larger than the 12 million tons fed last year, principally as a result of an expected jump in soybean meal output with the big bean crop. The prospective quantity available per animal unit is up 8% from last year.

Soybean meal production may be a million tons above the 65 million tons produced in 1956-57. Production of other oilseed meals will be smaller or maintained near last year's level. Total production of oilseed meals may be 6 or 7% above the 99 million tons produced in 1955-56.

No material changes in production or supplies of most other by-product feeds are in prospect. Output of tankage and meat scraps may be a little smaller because of a reduction in livestock slaughter. The quantity of molasses available for feeding may be as large as the 375 million gallons fed in 1955-56 but probably will remain below the record level of 425 million gallons in 1953-54.

Regarding price ratios, USDA says the hog-corn ratio probably will equal or exceed the long-term average. Milk prices are expected to continue relatively favorable, compared with feed prices. The beef steer-corn ratio also is expected to continue favorable to beef cattle feeders. Prices of poultry products probably will continue low relative to feed in 1956-57.

NiCarbazin



The development of a solid immunity in exposed pullets has now been established beyond all question of a doubt.

NICARBAZIN has so successfully met the needs of the broiler grower that it is routinely preferred over any other coccidiostat throughout the broiler industry. However, the needs of the poultryman raising replacement pullets are not the same as those of the broiler grower. His birds must develop an immunity to coccidiosis, since outbreaks are costly and since continuous lifetime feeding of a preventive coccidiostat is not practical.

Merck has conducted a long series of battery, floor-pen and field tests which prove: (a) NICARBAZIN permits the development of immunity in replacements, and (b) NICARBAZIN is sufficiently flexible to give protection in the face of varying levels of coccidiosis exposure. The results of these tests are now in hand and can be summarized:

1. NICARBAZIN permits adequately exposed replacements to establish an immunity to coccidiosis equal in every respect to that occurring in unprotected birds which have survived an attack of coccidiosis.

2. This immunity has developed in every case on exposure to cecal and intestinal coccidiosis.

3. NICARBAZIN markedly suppresses oocyst production, but it does not eliminate oocysts completely. As a result, other birds and subsequent broods may be exposed to the coccidia and thus develop their own immunity.

4. NICARBAZIN is highly flexible, and can be adjusted to permit effective immunity to develop over a wide range of exposure (varying conditions of soil, humidity and climate and seasonal incidence).

Since pullets can develop a solid immunity during the growing and starting periods to all species of coccidia to which they are properly exposed, NICARBAZIN should not be used in any laying ration.

One additional point needs emphasis. In the past, certain poultrymen have preferred to use spot treatment of outbreaks in order to assure the development of effective immunity . . . even when this resulted in costly losses. Now that the facts have been established, there is no longer any reason for feed manufacturers to permit poultrymen to deny their birds the benefits of a NICARBAZIN preventive program.

Tell your poultrymen about your feeds containing NICARBAZIN. Give them NICARBAZIN feeds for complete coccidiosis protection and high natural immunity.

If you have not received a copy of our new Technical Bulletin giving complete details on the immunity tests, send for it today.

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UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

Changes in Farm Size and Specialization

Two of the most important trends influencing the farm market are the increased size of the commercial farm business and the increased specialization of farming skills. This can be illustrated by comparing the investment per farm worker and the average size of individual farm enterprises.

Investment and Production Expense Up

Exhibit 1 shows a remarkable change that has and is taking place in American agriculture. Even allowing for inflation, the increased dependence of commercial farmers upon others in the economy is quite apparent. About one half of the increased investment represents increased use of machinery and equipment; the other half, inflation.

Currently, farmers are spending in the neighborhood of $22.3 billion per year for production expenses. This sum represents a substantial market for farm supplies.

Another thing of interest to the feed trade is the higher proportion of income spent by farmers for production expenses. In 1935, farmers realized net income of $4.6 billion, compared with production expenses of $5.1 billion. In 1955, realized net income was $10.6 billion whereas expenses were $22.3 billion. Stated another way, in 1935 about 58% of the gross farm income was spent for production items. In 1955, about 68% was spent for production items.

Enterprise Specialization

The economics of producing poultry and poultry products gives incentives either to have a large enterprise or only a small flock to provide the family with its own eggs. Feed men are familiar with developments in the broiler industry. They are credited with providing much of the ways and means by which this industry has increased its efficiency.

Almost as important to the feed industry is the trend in the size of the average individual laying flock. This trend is shown in Exhibit 2 where the number of layers in flocks under 50 and of 400 and over are compared. Clearly, the big flock is becoming more common.

A flock owner who specializes and increases the number of layers he has cannot afford to overlook opportunities for profit. Whether it's cage layers or not, the feed dealer has an opportunity to be of service. The margin of profit generally is such that the flock owner needs to run in order to keep up. This service includes having proper feeds available

EXHIBIT 1. Investment per farm worker in the U.S.

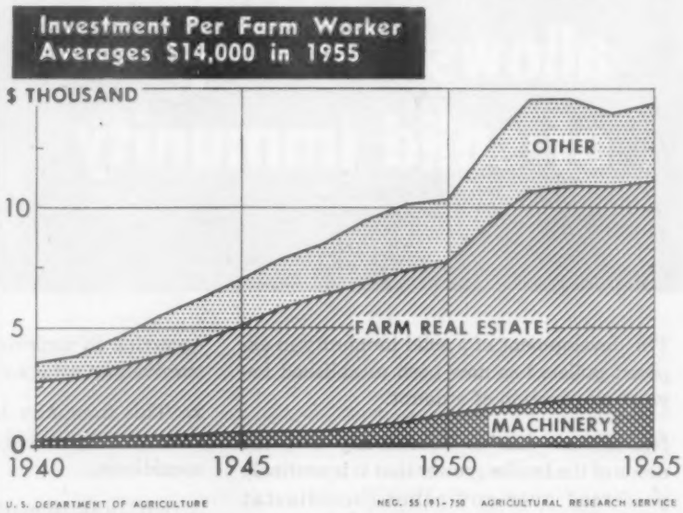
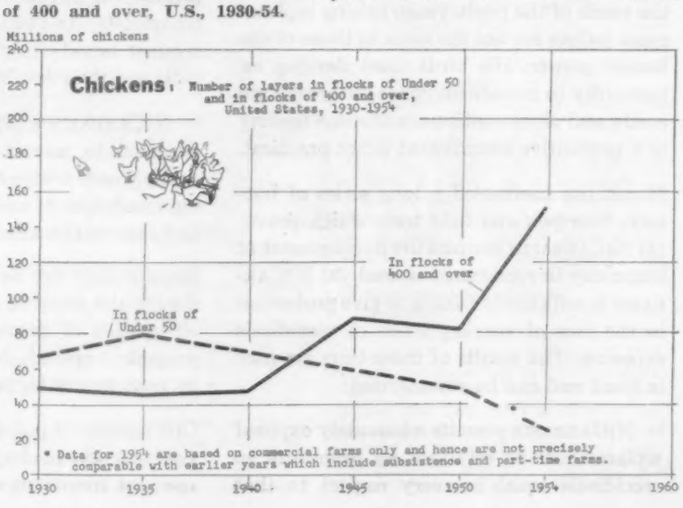


EXHIBIT 2. Chickens: Number of layers in flocks of under 50 and in flocks of 400 and over, U.S., 1930-54.



TENNESSEE CONVENTION—Here are some pictures from the recent convention of the Tennessee Feed Manufacturers Assn. in Nashville. In the first picture, feed industry problems are getting a thorough discussion by three of the men at the convention. Left to right are Henry G. Tilford, Sr., Dixie Grain Co., Shelbyville; Grady Nixon, Cumberland Feed Mill, Cartnage, and R. D. Erwin, Sr., R. D. Erwin Co., Nashville. In the second photo, A. M. Stevens (center), credit manager, Ralston Purina Co., a speaker on the subject of credit at the meeting, holds a post-meeting discussion with J. B. Johnston (left), credit manager, and F. W. Greer, president, Security Mills, Inc., Knoxville. The third picture shows W. N. Shearer (left), Borden Co., Roanoke, Va., looking over program notes with Bruce T. Ballew, Farmers Milling & Elevator Co., Collierville, and Dan J. Paul, Buckeye Cotton Oil Co., Memphis. (See story on page 14.)

as well as helping the owner understand the new developments in flock care.

Summary

In the future you can count on the increased size of commercial farms as well as increased specialization by farmers. The economic pressures are in this direction. Specialization has been the key word in industrial development, and it appears this trend will continue in farming.

What this means in terms of feed business is that you will need to keep pace with progress if you want to stay in a profit position. Profit, or the chance for profit, is the mainspring of our economic system. No thinking person would deny the possibility of profit to an efficiently operated business establishment rendering a useful economic service. So remember, farming is becoming an increasingly specialized business which means you, too, must have specialized goods and knowledge if you are to render maximum service in the years ahead.

Northeastern Supply To Handle Hetrogen K

VALLEY STREAM, N.Y. — The Hetrochemical Corp. has announced the appointment of Northeastern Supply Co., Ipswich, Mass., as its distributor for its line of vitamin K products in the New England area.

Technical service and warehouse stock service of Hetrogen K and Hetrogen K premix will be available from the distributing firm which serves the six-state area. Northeastern's sales staff is headed by Bill Lewis.

Hetrogen K is described by the company as "a water soluble highly effective yet low cost vitamin K for maximum protection against hemorrhagic disease."

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Now–5 big promotions to help you sell more Sterling Blusalt, more Sterling Green'salt

SALT WITH TRACE MINERALS ADDED

TRACE-MINERAL SALT WITH 10% "PHENO" FOR WORM CONTROL

1. **BLUSALT ADS AIMED AT FARMERS** are part of Sterling's big, new "Fun-on-the Farm" campaign. The "talking" animals in these ads attract the reader's attention and interest—fast. And they give the farmer a good profit story on this effective trace-mineral salt!
2. **BLUSALT POSTERS AND POINT-OF-SALE MATERIAL** in full color also feature the "talking" animals. Together with farm-paper advertising, this makes the strongest promotion ever used for a trace-mineral salt. Check on free Blusalt displays for your store!
3. **GREEN'SALT ADVERTISING TO FARMERS.** Latest ad in this series tells about "Sucarob," the new flavor ingredient that makes Green'salt fully palatable to all livestock. Ad also shows that only improved Green'salt assures continuous low-level worm control!
4. **GREEN'SALT ADS FOR VETERINARIANS**—the men who influence today's farmers. These ads promote low-level feeding of pheno as effective, economical worm control. And they show why this treatment is best accomplished by new pheno-fortified Sterling Green'salt!
5. **ADS YOU CAN USE TO SELL BLUSALT AND GREEN'SALT** are available in mat form—for your insertion in local papers or magazines over your name. Individual Blusalt and Green'salt ads are available, as well as combination ads. Check your Sterling representative.

• IMPORTANT SALES DATA ON BLUSALT, GREEN'SALT

Remind your customers of these facts: Blusalt contains salt plus six essential trace minerals (cobalt, iodine, manganese, iron, copper, zinc) to give protection against trace-mineral deficiencies. Green'salt (salt + 10% "pheno" + trace minerals) gives the same protection—*plus* control over internal parasites. Be sure you have adequate stocks of both Sterling Blusalt and Sterling Green'salt on hand . . . *to sell* and *to mix* in your own feeds. For complete feeding and mixing data on these quality salt products, write to International Salt Company, Inc., Scranton 2, Penna.

STERLING BLUSALT · STERLING GREEN'SALT—products of International Salt Company, Inc.

New Winter Oats Variety Announced

WASHINGTON — Bronco, a new hardy variety of winter oats, has been announced jointly by the U.S. Department of Agriculture and the Texas Agricultural Experiment Station. This high-producing variety was developed cooperatively by the Texas station and the department's Agricultural Research Service. Its ability to stand cold weather makes it suitable for the northern part of the winter oat belt.

A hardy progeny of a Fulwin cross, Bronco has shown considerable tolerance to Victoria blight, produces high yields of good quality grain and makes vigorous growth in the more northern portions of the areas where winter oats are seeded, USDA says.

The new variety has been compared in numerous tests with Red Rustproof strains and with Mustang. The latter variety, like Bronco, is a progeny of a cross between Fulwin and a Lee-Victoria strain. Bronco matures 5 to 7 days later than Mustang and is 3 to 4 in. taller.

Some 62 comparative trials of these oat varieties were made over a period of three years at more northern and southern stations of the winter oat area. In yield tests at the more northern stations, Bronco has averaged over 80 bu. an acre, or 6.7 bu. more than its sister strain Mustang, and 8.1 bu. more than Appler, a Red Rustproof variety. In tests at more southern stations, yields of Bronco and Mustang have been nearly equal.

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A LIVE YEAST CULTURE — for 4-footed animals and poultry. Supplies all known B Complex Vitamins including B_{12} plus other nutritional factors. Easy to add to any formula.
Write or Wire for sample and prices.
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STORAGE BUILDING BURNS

DENVER—Fire started by faulty electric wiring leveled a 150 ft. feed and storage shed at the Denver Livestock Feeding Co. Nov. 24. Owen Roberts, co-owner and manager of the firm, estimated the loss at $18,000. A 99 ft. tall mill building only a few feet north of the shed was saved.

SMALL CONTRIBUTION BUYS BIG GIFT

NEW YORK—A $1 contribution to CARE Food Crusade will deliver a 22-lb. CARE package of U.S. surplus food to a hungry family in Europe, Asia, the Middle East or Latin America.

CARE terms the package "the gift that has everything for those who have nothing." Names of contributors will go with each package to add the warmth of a personal greeting. The CARE organization urges that contributors send as many dollars as they can to its headquarters at 660 First Ave., New York 16, N.Y., or to local CARE offices.

Northwest Feed Men To Hold Dinner Dance

MINNEAPOLIS — The Northwest Feed Manufacturers Assn. will hold its annual dinner dance at the Calhoun Beach Hotel Dec. 7.

Dinner, with a choice of lobster or filet mignon, will be served at 8 p.m., preceded by a cocktail hour starting at 6:30 p.m. A floor show is scheduled for 9 to 10 p.m., followed by dancing.

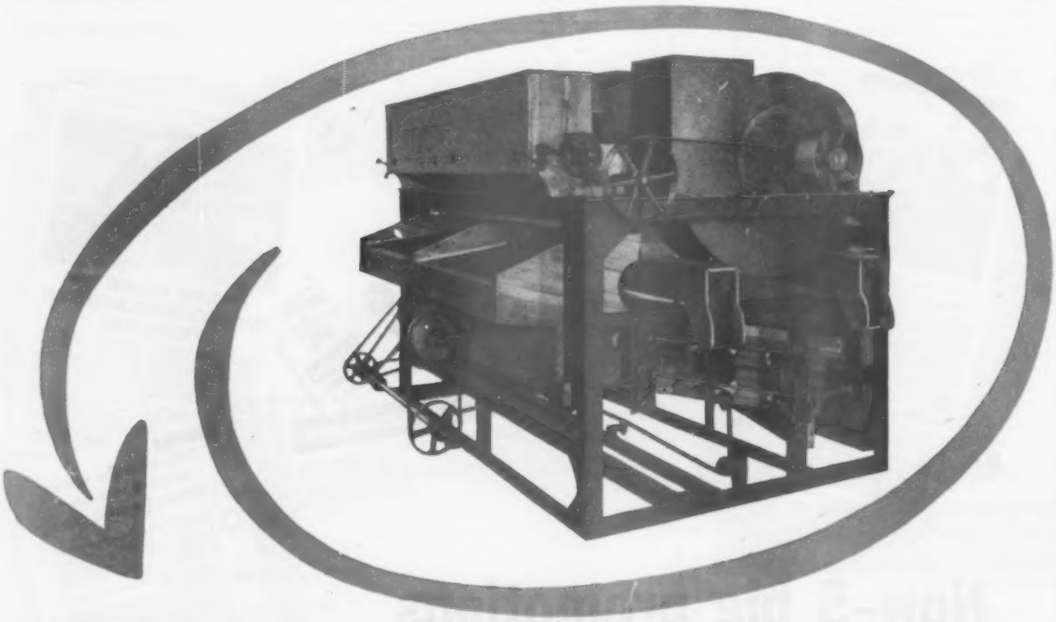
Members have been asked to send reservations to R. A. Blomfield, Blomfield - Swanson, 6009 Wayzata Blvd., Minneapolis 16, Minn.

Consumers Co-Op Holds Open House

KANSAS CITY — An open house and formal dedication of the new office building of the Consumers Cooperative Assn., Kansas City, took place Nov. 23 and Nov. 26. The new building, which was erected at a cost of $1,500,000, brings together a headquarters staff which previously was housed at two separate locations. CCA operates feed mills at Enid, Okla., and Eagle Grove, Iowa, and has its feed division headquarters in the new building.

OFF TO EUROPE

MANHATTAN, KANSAS—Arthur D. Weber, dean of agriculture at Kansas State College, and Mrs. Weber left this week for England and Spain following a stop at the International Livestock Exposition in Chicago, where Dean Weber judged steer classes and selected the grand champion. In London he will judge cattle at the Smithfield Show. The Webers plan to tour England and Spain the remainder of December.



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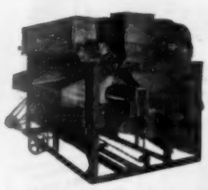
Your best investment in Receiving Separators for grains and other products in elevators, terminal warehouses and processing plants.

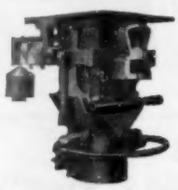
Eureka grain cleaning and separating equipment has been the leader for 100 years, and today's models represent the finest in modern design, operation and construction. Superb scalping and cleaning, uniform separations, large capacity, low operating cost, dependability and economy are important features which place the Eureka line above all others. Grains of every kind, in mill, elevator or processing plants are handled with speed and uniformity. Where extra large capacity is desired, a unit of double screen area and capacity is provided in the Eureka Double Twin Shoe Super Cleaner. We invite your inquiries.


Super Cleaner—Receiving Separator

Hi-Capacity Receiving Scalper

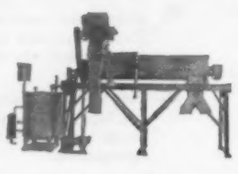
Vertical Batch Mixers

Corn Cutters and Graders


OK Bagging Scale—Series A, B

Horizontal Batch Mixer

Oat Crimper—Single Pair Roller Mill


Duplex Agitator Molasses Mixer

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Mineral	6%	T.D.N.	80-85%
T.D.N.	85%	Fibre	12-14%
B Complex Vitamins		B Complex Vitamins	
Growth Factors		Growth Factors	

Feed registration time is here again! This year be sure that your feed tags include Distillers Dried Grains and Dried Solubles. More and more feed mixers are learning that Distillers Dried Grains and Dried Solubles supply the important natural B-vitamins, proteins, minerals, and other growth factors, which produce real feed power.

'57 will be a normal production year, but to insure your supply, contact your favorite source soon.

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Diet Effect on Mineral Use Noted in Tennessee Talk

By MARTIN E. NEWELL
Feedstuffs Editorial Staff

NASHVILLE — The carbohydrate and protein character of a diet has an important influence on the availability and utilization of many minerals in that diet, feed men were told at the annual meeting of the Tennessee Feed Manufacturers Assn. here Nov. 18-19.

The speaker was Dr. Homer Patrick, director of the University of Tennessee - Atomic Energy Commission agricultural research program.

Reporting on the results of some studies with radioactive tracer minerals at Tennessee, Dr. Patrick said diets with identical levels of phosphorus produced different degrees of phosphorus assimilation, as measured by bone ash, depending on whether the diet was vegetable protein, animal protein, or animal phospho-protein. Differences also were shown in these experiments on the three protein diets as between bone meal and two dicalcium phosphates, each of the latter producing quite different results, although they were chemically equal. The animal phospho-protein diets equalized the bone ash levels of all three phosphorus sources.

Differences of this type occur because of chemical action taking place in the gastro-intestinal tract, Dr. Patrick said. When any nutrient is ingested, he said, a portion of it is immediately utilized, a portion is excreted and a portion recycled through the body and returned to the gut for further action. Many important nutrients are recycled up to three times, he added.

However, chemical situations may arise in the gastro-intestinal system which influence the degree to which each of these three actions takes place, Dr. Patrick indicated. These situations often are influenced by the protein or carbohydrate characteristics of the diet. Certain carbohydrates, such as those of wheat or alfalfa, seem to promote recycling of minerals while others grab these minerals and carry them off to be excreted. Sometimes minerals which normally are excreted through the kidneys are carried out through the feces with consequent upsetting of the normal electrolytic balance of the kidneys, he said.

In addition to this absorption of minerals, two other types of interference can occur, Dr. Patrick said. In one case, the nutrients may be bound up in a chemical complex in the gut and become biologically unavailable. For example, phosphates often have an influence on zinc removal when the zinc ions get bound up in crystals of phosphate. In the other case, the recycling process can build up in the gut an excessive amount of some mineral, which then begins interfering with utilization of others.

Such occurrences, Dr. Patrick implied, create circumstances in which diets statistically adequate in trace minerals may prove deficient in practice because the mineral becomes biologically unavailable.

Disease Research

The latest developments in the study of CRD (chronic respiratory disease) and synovitis were discussed by Dr. W. H. Patton, American Cyanamid Co., Pearl River, N.Y.

Explaining the causes and symptoms of CRD, Dr. Patton said there is a great need for a simple diagnostic technique, although there has been some progress in this direction and "we are better off than three years ago." The blood test, he said, is now reliable as a flock test and in experienced hands is a good test of individual birds. PPLO (pluero pneumonia like organisms) are not always pathogenic, he pointed out, and it is necessary to determine type to be sure.

For the control of visible CRD, Dr. Patten recommended feeding 450 grams per ton of feed of Aureomycin, given in drinking water for 7 to 14 days, depending on local circumstances. After this period, 100 grams of Aureomycin per ton should be given until the birds are marketed, he said. As a preventive measure, he recommended administration of 100 grams per ton through to marketing, or 50 grams per ton plus a step-up to 200 grams on the appearance of symptoms or exposure to stress such as vaccination and the like. When the danger is over, the dose can be dropped back to 50 grams again, he said.

Such treatment is not the final answer to the CRD problem which takes a heavy industry toll, Dr. Patton said. The most effective control point is in the breeder flock, he declared. Although it is not the hatcheryman's fault, it has been found that CRD dissemination takes place from infected breeders through the egg to the chick. Presence of PPLO

PHONE
PLEASANT 2-5191

Announcement -- A. T. Ferrell and Company Acquires Randolph Grain Drier

Gentlemen:

A. T. Ferrell and Company is proud to announce the recent purchase of the O. W. Randolph Grain Drier business at Toledo, Ohio. Negotiations which began with the late owner were finalized early in November with his widow, Mrs. Randolph.

It was in 1913 that Mr. Randolph, owner of the Toledo Central Grain Co., engineered and built the first drier for his own use. Other grainmen recognizing the advantages of controlled removal of moisture appealed to him to design and construct similar units for their plants. This quickly brought about the founding of the Randolph Grain Drier Company which has since flourished throughout the past forty years under Mr. Randolph's direct guidance to become one of the leading manufacturers of drying equipment for beans, corn, wheat, oats, rice, peanuts, cereals, etc. He was a firm believer in building only the best possible quality product and countless letters from satisfied owners of Randolph Driers throughout the years have unquestionably proven that his emphasis on sustained quality was sound. This unit is a compatible companion to our existing Clipper line of cleaners, elevators, debearders, scarifiers, conveyors, collectors, C.A.E. Moisture Tester, etc.

This message is intended to serve a two-fold purpose --

To let Randolph customers be among the first to know of the change of ownership and to assure them that our engineering, production, parts and service departments have joined forces with the former Randolph men to aggressively continue the manufacturing and servicing of this fine product. Our combined research and experimental facilities will enable further performance studies leading to increased efficiencies of this and all units manufactured under the Clipper trademark.

Secondly, to notify the entire trade that our company is in an immediate position to build and service grain driers with the same mark of high quality that has typified our entire line of cleaning and handling equipment for three-quarters of a century.

Phone Saginaw PLeasant 2-5191 collect and ask for the Randolph Drier Division for any information or assistance you may need -- whether it be in relation to Randolph Driers that you are presently operating or assistance in planning newly contemplated installations.

Yours very truly,

A. T. FERRELL & COMPANY

E. L. Kaylor

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President

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DIES AT 63—This is the most recent photograph of Henry W. Swanson, manager of the agricultural division, White Laboratories, Inc., Kenilworth, N.J., who died Nov. 19 at the age of 63. Mr. Swanson had been with White for 20 years and formerly had been with the Quaker Oats Co., Grain Belt Mills, St. Joseph, Mo., and VyLactos Laboratories, Inc., Des Moines, Iowa.

in a very large percentage of eggs from infected breeders has been established.

Dr. Patton outlined a program for eradication of PPLO in foundation breeding stock, which starts with injection of 200-250 mg. of Streptomycin per bird every three weeks. No hatching eggs should be used until a week after first injection. Chicks should be hatched in isolated premises, with no other eggs permitted. The chicks should be brooded and grown in small groups on separate farms with no other birds. Flocks should be immunized for Newcastle, bronchitis and laryngotracheitis and the flock blood tested for PPLO at 8 to 10 weeks of age and again at 18 to 22 weeks. Reactors and flocks in which they are found should be taken out of the program. The same management procedures should be used for hatching eggs and chicks from PPLO free breeders.

Several CRD problems need more study, Dr. Patton said. Some Streptomycin-resistant strains of PPLO are appearing, so a suitable antibiotic to replace it is needed. Better methods are needed for identification and isolation of various strains of PPLO, as well as an improvement of the blood test. Two questions that need answers, Dr. Patton said, are: "Do other hosts harbor avian strains of PPLO?" and "Are all hatchery eggs infected or is there a cycle for shedding the organisms?"

Synovitis

In a discussion of synovitis, which he said caused annual losses to poultrymen of $25 to $30 million, Dr. Patton pointed out that the disease is caused by a virus-like organism which finds a home in the synovial structures of joints and tendons and which is resistant to most antibiotics. Synovial inflammation brings on fluids which harden and cause lameness and general unthriftiness in the birds.

In some recent work at West Virginia, the use of Aureomycin proved effective in control and prevention

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...and this is what it can mean to you!

ONLY the "Triple Powered" SECO with three separate motors—one for blower, and one at each end of main rotor shaft . . . provides these proven advantages:

Now you can REDUCE EXPENSIVE DEMAND CHARGES . . . increase overall power and capacity (especially advantageous in areas with limited power supply) . . . pay only for power you actually need for each job. SAVINGS ALONE WILL PAY FOR ENTIRE UNIT!

Install your choice of power units (from 75 to 225 h.p.). Use all three motors—or two motors—when the job is light. Avoid complete breakdown when one motor needs repairs! Have the many advantages of the "Triple Powered" SECO SUPERIOR HAMMERMILL AT A COST OF ORDINARY SINGLE UNIT HAMMERMILLS.

NEEDS NO CLEANING — *ever!*

SECO's revolutionary design, with twin paddle self-cleaning rotors, completely eliminates cleaning nuisance. Grinding action assures uniform mixing. No lumping . . . molasses does not have to be heated. Capacity up to 175 bags per hour (Model S-100—up to 300 bags per hour).

SECO "TWIN" MOLASSES MIXER
Model S-75

Higher OUTPUT — *lower* COST with the SECO VERTICAL FEED MIXER

Exclusive design prevents feed bridging and clogging . . . saves time and labor . . . gives fast, uniform output at low operation and maintenance cost. Models from ½ ton to 5 ton capacities.

"Seco . . . equipment of tomorrow--available today!"

SOUTHERN EQUIPMENT COMPANY
GOODLETTSVILLE, TENNESSEE

SECO, with a quarter century's experience in planning and equipping mills, is **Headquarters** for Feed Mill equipment. **Write for literature.**

Without obligation, send the facts on:
SECO triple-powered HAMMERMILL_____
SECO "Twin" MOLASSES MIXER_____
SECO Vertical FEED MIXER_____
Name_____
Firm_____
City_____
Zone_____ State_____

of synovitis, Dr. Patton reported. Continuous medication at a rate of 100 grams per ton proved superior to intermittent doses and eliminated synovitis in the tests flocks after four days and continued to forestall recurrence. Intermittent doses of 200 grams reduced synovitis, but incidence increased again when treatment was stopped. The best way to combat the disease, Dr. Patton said, is not to give it a chance to develop, using early and continuous medication.

Feed Credit

Credit and trucking were two trade problems which came in for considerable discussion at the meeting. A. M. Stevens, credit manager, Ralston Purina Co., outlined some of the fundamental principles of sound credit. To the well-known "three c's" of credit—character, capacity and capital—he added a fourth "c"—confidence—which he said is just as essential. This means confidence in the borrower and confidence in ability of the seller and his products to perform a satisfactory job.

Mr. Stevens said feed manufacturers should encourage local banks to engage in production loans for farmers and urged mills to share their credit experiences through the recognized credit agencies, acceptable to the government and the industry. He added that there are some forecasters who predict poor broiler markets for some years ahead, and if true, weak credit risks may put many a mill out of business.

Trucking Feed

The vast and rapid growth of trucking of feeds in the Southeast has brought about problems of state and federal regulation, and these topics were discussed with a trade panel group by John Gamble of the ICC motor vehicle division, Nashville, representing the federal view, and Harold Seligmann, motor vehicle division, Tennessee Public Service Commission. These attorneys outlined the requirements of state and federal law.

First, they pointed out that raw agricultural commodities (unprocessed), fish and livestock can be hauled by truck legally anywhere without specific authority. Other products may be hauled without authority only by the owner of that commodity for his own use, by a common carrier or by a registered contract carrier.

A trucker who is continually hauling feeds to which he takes title is classed as a broker rather than a trucker, but one who hauls only occasionally and is primarily in the trucking business cannot be so classified, the attorneys said. With regard to leasing of trucks by a shipper, they said such arrangements put the trucking into the class of private carrier only if the lease puts the control of the truck in the lessee's hands in the same manner as if he owned the truck. There is no such thing as a "trip lease" in the eyes of federal or state authorities, it was said. Special rates for contract carriers must have the approval of intrastate or interstate authorities, it was brought out.

Three state officials were on the convention program. Buford Ellington, commissioner of agriculture, brought greetings from his department. E. C. McReynolds, assistant director of extension, University of Tennessee, did the same for his group and introduced many of the county agents and other workers who were in the audience. He discussed some of the fundamental economic trends in agriculture and some of the state programs under way in his department. L. C. Jacobs, state feed control official, in his talk mentioned the increased difficulties of registration, particularly with growing complexities of feed additives. He said he hoped for the day when, instead of printing on tags a large number of generally unintelligible chemical descriptions of additives, it would be possible to state simply: "Vitamin additive approved by the state of Tennessee."

Officers Elected

Q. D. Edmonds, manager of the Model Mill Co., Jackson, was elected president of the association. He served as vice president in the past year and succeeds M. E. Staed, Ralston Purina Co., Nashville.

As vice president, the association selected W. D. Hudson of the Cumberland Milling Co., Clarksville. Wendell H. Levine, Nashville, was reelected secretary-treasurer.

As directors, the group chose D. Bibb Gambill, Barry-Carter Milling Co., Lebanon; Henry C. Tilford, Jr., Dixie Grain Co., Shelbyville; G. P. Moseley, Quaker Oats Co., Memphis; M. E. Staed, Ralston Purina Co., Nashville; Turner Whitworth, Nutrena Mills, Memphis, and R. W. Fay, McMillen Feed Mills, Memphis.

Dawe's

NOW DAWE'S MAKES FEED FORTIFICATION PUSH-O-BUTTON-EASY

THIS IS THE DAWE'S VITAMELK SWINE PROGRAM:

YOU Push One Button—WE SUPPLY:

1. Vitamelk—a comprehensive vitamin, trace mineral, antibiotic and unidentified factors fortifier. Full fortification, in one package.
2. Complete formulations for farm-tested livestock feeds in each stage of growth and production.
3. Tag information for today's complicated feed tag requirements.
4. Complete feeder-instructions on how to use Vitamelk-fortified feeds, to best take advantage of their great built-in power.
5. Dawe's quality control laboratory is a remarkable help in solving special problems.
6. Merchandising and sales counsel.
7. Complete and continuing responsibility for applying the latest nutritional knowledge to your feeds.

COMPLETE PROGRAMS for Poultry, Swine, Dairy Cattle, Beef Cattle, Turkeys

Let us figure the cost of Dawe's Vitamelk delivered to your mill. Write us.

Do you want to be absolutely *sure* the hog feeds *you* make are the best your customers can buy? That you offer a complete, gain-producing, new Swine Program which will enable you to meet—and beat—competition of *any* size? Yet, feeds whose formulation and fortification are push-button-easy?

To have this assurance—and ease—use the new Dawe's Vitamelk Swine Program. You retain the economy of local mixing, yet take advantage of Dawe's big-scale, centralized, scientific nutrition research.

Dawe's specialized nutrition know-how is *yours—yet you pay for the Vitamelk only*—when you use Dawe's Vitamelk Programs.

Dawe's Laboratories, Inc.

4800 S. Richmond Street Chicago 32, Illinois

WORLD'S OLDEST AND LARGEST SPECIALISTS IN VITAMIN PRODUCTS FOR FEEDS

Task Group to Study Increased Use of Oilseeds, Animal Fats

WASHINGTON — Appointment of an 11-member oilseeds and animal fats task group to advise the president's bipartisan Commission on Increased Industrial Use of Agricultural Products has been announced by J. Leroy Welsh of Omaha, commission chairman.

The first meeting of the task group was held in Chicago Nov. 28. James C. Konen, vice president in charge of research, Archer-Daniels-Midland Co., Minneapolis, is chairman of the group. Other members are:

Dr. Waldo Ault, Eastern Utilization Research Branch, USDA, Philadelphia; Harry S. Baker, president, National Cottonseed Processors Assn., Producers Cotton Oil Co., Fresno, Cal.; Marshall Ballard, Jr., president, American Tung Oil Assn., Lumberton, Miss.; Don S. Bolley, technical director, Baker Castor Oil Co., Bayonne, N.J.; John J. Hamel, Jr., National Renderers Assn., Chicago; Wesley Hardenburgh, president, American Meat Institute, Chicago; Willard Lighter, vice president, Chemurgy Division, the Glidden Co., Chicago; George S. Prichard, executive secretary, National Flaxseed Processors Assn. and Washington representative of the National Soybean Processors Assn., Washington; Dr. Herbert E. Robinson, director of laboratories, Swift & Co., Chicago; Robert Van Tuyle, vice president, Emery Industries, Cincinnati, Ohio.

The task group will review the technical and economic position of oilseeds and animal fats. On the basis of this study, the group will submit an advisory report for consideration by the commission in making its recommendations to Congress concerning legislation designed to increase industrial uses of farm products.

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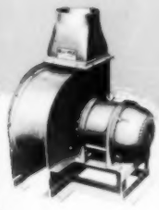
DEPENDABLE MILL EQUIPMENT

for top service and economy . . . increased profits!



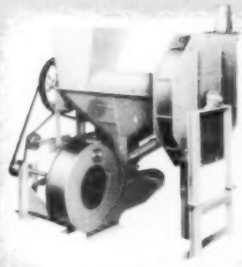
Grain Blower & Exhaust Fan

Vertical Screw Elevator

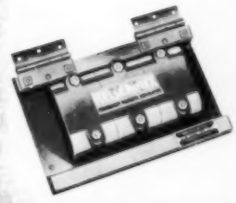
Cob Crusher for making Poultry Litter

Corn Cutter and Grader with Aspirator

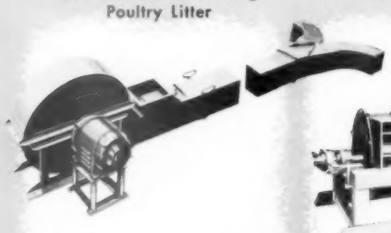
Vertical Feed Mixer ½ to 5 tons and larger



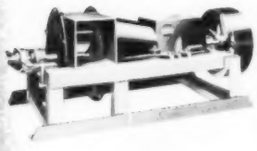
Corn Sheller with blowers for grain and cobs



Magnetic Separator protects mill machinery



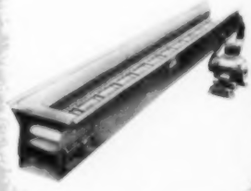
Forced Air Carloader with motor or belt drive



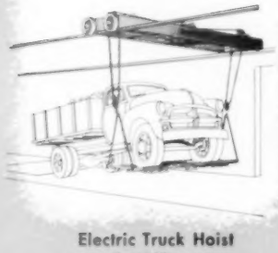
Regular and Pitless Corn Shellers

Twin Molasses Mixer

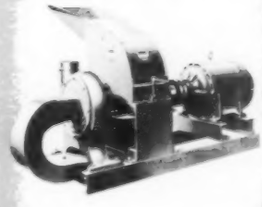
Corn Scalper with or without air cleaner



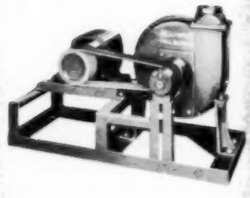
Chain Drag in double and single geared types



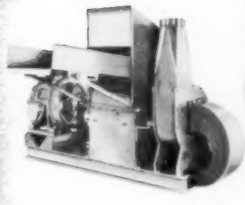
Electric Truck Hoist cuts handling costs



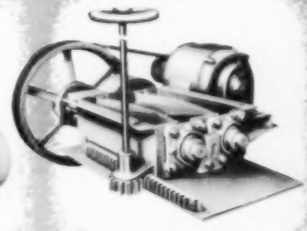
Model "M" Hammermill with direct connected motor



Attrition Mill Blowers for any size plant



Model "S" Wide Throat Hammermill

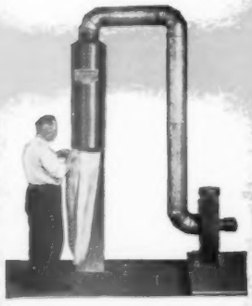


Corn Crusher and Feed Regulator

Grain Feeder

every KELLY DUPLEX machine is fully **GUARANTEED**

We will gladly ship you any Kelly Duplex machine on approval. If it is not completely satisfactory, you are free to return it within 30 days after arrival at destination, by prepaid freight, for refund of full purchase price. In addition, each Kelly Duplex is guaranteed against defects in material and workmanship for 90 days.



Electric Bag Cleaner

The Duplex Mill & Manufacturing Company Springfield, Ohio

Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

NAME_____

FIRM_____

CITY_____ STATE_____

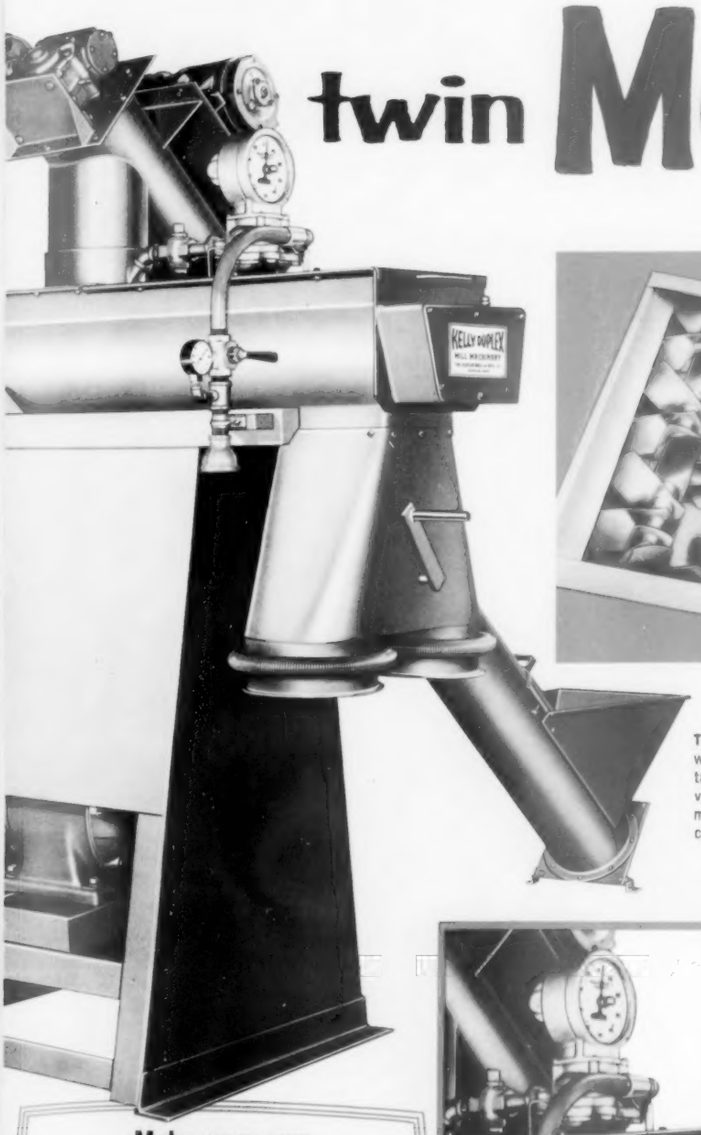
Mail this Card– No Obligation KELLY DUPLEX

Check Here!

- ☐ Twin Molasses Mixer
- ☐ Hammermill
- ☐ Vertical Screw Elevator
- ☐ Electric Truck Hoist
- ☐ Corn Sheller with Blowers
- ☐ Pitless Corn Sheller
- ☐ Regular Corn Sheller
- ☐ Magnetic Separator
- ☐ Cob Crusher
- ☐ Corn Cutter and Grader
- ☐ Vertical Feed Mixer
- ☐ Bucket Elevator
- ☐ Forced Air Carloader
- ☐ Chain Drag
- ☐ Corn Crusher—Regulator
- ☐ Grain Blower
- ☐ Corn Scalper
- ☐ Mill Blower
- ☐ Grain Feeder
- ☐ Electric Bag Cleaner
- ☐ Complete Line Catalog

KELLY DUPLEX

twin Molasses Mixer



The mixing chamber, which consists of 2 rotary shafts and 36 individual paddles, is a model of blending efficiency.

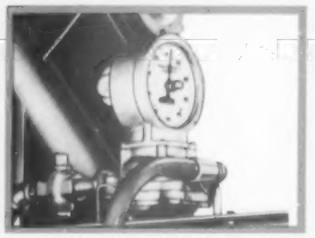
Mixes quickly, evenly, thoroughly without balling or lumping . . . practically eliminates all cleaning!

With a Kelly Duplex Twin Molasses Mixer in your mill, there's big volume and big profits ahead for you in either private brand or custom mixed sweet feeds. Features include a complete, easy-to-adjust control system that lets one man set and maintain the most exacting molasses-feed proportions with absolute accuracy . . . a twin paddle rotor unexcelled for fast, thorough, even mixing—and self-cleaning characteristics . . . a conveyor that swivels to any position or is completely demountable . . . and many, many others.

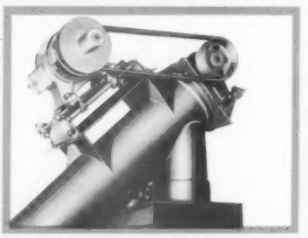
Before you buy, you owe it to yourself to compare this outstanding machine point for point (features, equipment, construction and cost) with all other makes . . . and see for yourself why a Kelly Duplex is your one best buy. The card will bring you full details.

Make your own "point for point" comparison!

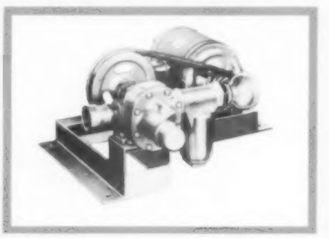
Mail card today for full details



Molasses Meter records in pounds, gives unexcelled accuracy, has turn-back attachment. 3-way valve (at left) can be conveniently hooked up for retail bulk molasses sales.



Variable Speed Control on the 1 H.P. screw conveyor gives you positive, finger-tip control of feed flow into the mixer. Conveyor can be removed from mixer and used elsewhere, if so desired.



Molasses Pump is powered by 5 H.P. motor. Special strainer removes foreign matter before it can enter pump. Adjustable by-pass valve eliminates need for return pipe to molasses supply.

FIRST CLASS
PERMIT NO. 72
(Sec. 34.9 P.L.&R.)
SPRINGFIELD, OHIO

VIA AIR MAIL

BUSINESS REPLY CARD
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

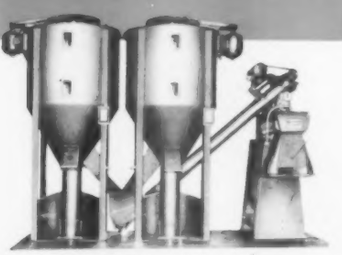
7c—POSTAGE WILL BE PAID BY

THE DUPLEX MILL & MFG. CO.

SPRINGFIELD, OHIO

Continuous Sweet Feed Mixing

A "Twin" and two Kelly Duplex Feed Mixers give you fast, economical production . . . greater profits



While the batch from one feed mixer is being processed in the "Twin," the second mixer is preparing a new batch. Operation is fast . . . continuous . . . profitable. Vertical feed mixers are available in 6 sizes—½ to 5 ton—to meet your needs.

Strange how much you've got to know before you know how little you know.

◆ ◆ ◆

Client: "Do you think you can make a good portrait of my wife?"

Artist: "My friend, I can make it so lifelike that you'll jump every time you see it."

◆ ◆ ◆

Youth: "Did anyone ever tell you how wonderful you are?"

Miss: "No, I don't think anyone ever did."

Youth: "Then I'd like to know where you got the idea."

◆ ◆ ◆

Definition of a lowbrow: A man who moves his lips while reading comic books.

◆ ◆ ◆

Guy: "My gal has the worst memory in the world."

Another Guy: "She forgets everything, huh?"

Guy: "No, she remembers everything."

◆ ◆ ◆

Sometimes it seems like the cost of making history is more than the darned stuff is worth.

◆ ◆ ◆

"Does the doctor think your wife is going to die?"

"Dunno. He told me to prepare for the worst and durned if he ain't got me guessin'."

◆ ◆ ◆

A draftee was shaken by his platoon sergeant after the rookie's first night in an Army barracks.

"It's four-thirty!" bellowed the sergeant.

"Four-thirty!" gasped the draftee. "Man, you better go to bed! We got a big day tomorrow!"

◆ ◆ ◆

Young guy was preparing to marry a gal, as sometimes happens, but one thing bothered him: she stipulated that she'd make that trip to the altar only if he would pay off all her widowed father's debts.

"Looky here, honey," he said one night, "I've been thinking this thing over. Before I marry you and pay off your father's debts, there's one thing I'd like to know:

"Who got your old man in debt in the first place?"

◆ ◆ ◆

Several days after his father died, little Johnny was stopped in the street by a kindly neighbor. "And what were your poor father's last words?" the neighbor asked.

"He didn't have any," Johnny replied. "Mother was with him to the end."

◆ ◆ ◆

Rastus: "Yessuh, I done found out that honesty is the best policy after all."

Mose: "How come?"

Rastus: "You remember that dawg I stole last week? Well I tried to sell it for two whole days and nobody would give me more than a dollar for it, so I took it back to the owner and collected the reward. She gave me five dollars."

SPECIFY
Columbia Calcium
COLUMBIA QUARRY CO.
1007 Washington Ave.
ST. LOUIS 1, MO.

WORLDWIDE RESOURCES
FEED INGREDIENTS
JUST A PHONE'S THROW AWAY
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Ryde's GRO-RITE
CALF PELLETS For Changing over to Dry Feed
Protein 19%—Fat 2.50%—Fibre 7.50%
Gets the calf off milk and on low cost roughages sooner—more economically! Saves money on high priced milk and milk substitutes! Ryde's GRO-RITE is palatable and nutritious—contains all the essential proteins, vitamins, and minerals for rapid growth. Enriched with stabilized Vitamin A, Vitamin B-12, Vitamin D, and antibiotic feed supplement! An Extra Profit Item.
RYDE & COMPANY 5425 W. Roosevelt Road, Chicago, Ill.

Let's take a new look at POLYSTAT
MULTI-CHEMICAL FEED ADDITIVE
AFFORDS
BROAD DISEASE PROTECTION
FOR CHICKENS AND TURKEYS

DR. SALSBURY'S
POLYSTAT
MULTI-CHEMICAL; BROAD-RANGE DISEASE PROTECTANT FOR CHICKENS AND TURKEYS

"Broad spectrum" is a descriptive term applied to certain drugs and feed additives. It means that they are effective against widely different damaging disease organisms.

Polystat, with its combination of chemicals (each effective against specific diseases), is truly a broad-range additive. It is a protectant against the following diseases and conditions:

COCCIDIOSIS
— all types in chickens and turkeys.
TYPHOID
— in chickens and turkeys.
PULLORUM
— affords a good measure of protection in chicks and poults.
WORMS
— large roundworms and tapeworms.
HEXAMITIASIS
— in turkeys.
BLUECOMB
— in turkeys.

In addition, Polystat *stimulates growth* and *improves feed conversion*. Its effect on subclinical (unseen) disease and stress factors is indicated by the improvement in flock health, growth, and production.

Everyone connected with the poultry industry knows disease problems can be complex. We who work directly with diseases are constantly discovering new facts and concepts, such as the effects of stress on the physiology and, therefore, the disease resistance of the bird.

You in the feed industry are certainly aware of the increasing need for preventive, therapeutic, and supportive mixtures.

Clearly, with the bewildering complexity of diseases and stress factors, the poultryman now needs protection along a broad front. This is why I urge you to take a new look at Polystat.

Polystat, a multi-chemical product, affords the broad disease protection that poultrymen need. It helps prevent coccidiosis, worms and hexamitiasis, and also stimulates growth. Recently, we have discovered that Polystat also offers protection against pullorum, typhoid, and turkey bluecomb.

All these specific disease-preventing properties add up to effectiveness against a broad range of organisms from Salmonella bacteria to protozoans and worms.

The effect of Polystat on growth and on feed efficiency indicates that it reduces subclinical disease and minimizes stress factors.

Polystat sometimes is compared with additives that only prevent coccidiosis, or that only control worms, or that only stimulate growth. None of these comparisons can be valid, for Polystat is more than a coccidiostat, more than a worm preventive, more than a growth stimulant. Polystat is in fact many feed additives in one!

I know your customers will be enthusiastic about the broad disease protection Polystat affords.

I believe you too will appreciate the broad-range benefits of Polystat. It simplifies your feed-additive program. You do not need to include a separate coccidiostat, a separate wormer, or a separate growth stimulant. With Polystat, you have all in one — an additive that improves the efficiency of your poultry feeds. It's worth more because it does more.

This has been but a brief new look at Polystat. To get the full picture, I invite you to write for Polystat Feed Manufacturers Guide No. 7-A.

Sincerely,

John H. Salsbury Jr.

Vice President and General Manager

DR. SALSBURY'S LABORATORIES, Charles City, Iowa

recommend, promote and profit from
Dr. Salsbury's complete line of poultry medicines

Dr. SALSBURY'S

Trends in Automatic Feed Processing

Smaller Plants • Automatic Control • Pneumatic Conveying
Single-Floor Mills • Specialty Plants • Low Labor Costs
Bulk Handling of Ingredients and Feeds • More Pelleting

By Elmer E. Garnsey
Staff Writer
Sprout, Waldron & Co., Inc.

EDITOR'S NOTE: In the accompanying article, a feed mill engineering and equipment company writer offers a view of current and future trends in feed manufacturing operations. Mr. Garnsey points to some of the recent automation and other developments in feed production but adds that "we have only scratched the surface where futuristic feed manufacturing techniques are concerned." Among other things, he feels, there also will be more pneumatic and bulk handling of materials and more single-floor mills. The feed plant trends discussed and forecast are for mills of moderate size, 200 to 400 tons per day of all types of feeds. Sprout-Waldron engineers believe — and cite recent developments in the industry to that effect —that it is this size plant, located in strategic areas, that is being given most consideration where new and modern feed manufacturing plants are being built.

During recent years, feed mixing techniques have kept pace with corresponding advances in other industries. Evolution from the scoop shovel and wheel barrow days to current push-button, robot-controlled mixing plants has been rapid and dramatic.

As is usually the case, those who resist or are unable to keep up with these changing technologies have either dropped by the way-side or are struggling for existence. Failure to cope with these changes in a static economy might give some a certain amount of salvation. However, present day economic conditions are far from static. Rising costs have placed the feed manufacturer in a position of intense competition for survival.

A capable feed manufacturer without a modern plant that provides volume quantities of properly balanced formula feed, starts with a tremendous disadvantage. Unless properly remedied, the disadvantages of obsolescence may doom the miller's best efforts to failure.

Smaller Plants

Past trends in feed mill design and construction were toward plants of greater volume. Simultaneously, demand for accurately balanced feed rations having a perfect blend of ingredients made itself felt. Today, this trend has begun to reverse itself. As trends are formed by basic needs, we now have a trend that is adapting itself to smaller operations.

The smaller installations will be constructed in promising communities where consumers can be serviced efficiently at the local level. These operations are in the 200- to 400-ton-per-day size. By servicing customers of these plants at the community level, the feed mill operation tends to become regarded as a local industry. The smaller, centrally located feed mill operations have tremendous delivery cost, and public relations advantages over their big city competitor. Today, many large feed companies and small independent operators have discovered the advantages of strategically located smaller feed mills.

Present and future day feed mills have little similarity to the more primitive operations of yesteryear. The electronic robot-controlled units of today bear the same resemblance to the burr stone mill operation of 50 years ago that the submarine Nautilus bears to an Eskimo kayak.

During the years of rapid evolution, feed manufacturers progressed rapidly from the simplest of hand grinding and mixing techniques into more advanced methods. These include percentage, continuous flow and batch systems. By and large, the preference of modern feed millers in the 200-ton-output category has become stabilized at a continuous type batch mixing system. However, larger operations that turn out greater quantities of a few basic mixes only, continue to prefer the continuous flow system controlled by gravimetric feeders.

Complete Automatic Control

The ideal reached by the continuous batch system involves complete automatic control through the use of an electronic batching and material handling panel. From the time it is unloaded, to the moment it departs from the plant, feed material can be controlled and routed by one or more electronic systems. Interlocked in the automatic panel are relays of controlling devices. These safety devices will shut off the mixing system at the first sign of an empty bin or equipment failure, or of a short in the electrical system.

Feed ration formulas are established on a series of scale-like dials. The dials automatically feed the respective ingredient poundages into the system in proper sequence.

A recent refinement of the robot dial system is the birth of the automatic computer punch card. Feed rations are punched on cards of identical size. The cards are then fed into the main system which correlates the number and weight of material to be mixed with the batch poundage desired. An automatic card system eliminates nearly every possible chance for human error.

In combination with the continuous batch system that forms the heart and central nervous system of the feed milling operation, modern size reduction, materials handling and miscellaneous special application machinery is brought into play. Size reduction units such as hammermills, attrition mills and roller mills operate continuously during the main mixing operation. These units are fed by mechanical or pneumatic conveying machinery. Processed feed materials leaving these units often are conveyed to holding bins by pneumatics.

Pneumatic Systems

Pneumatic systems have come of age as one of the most efficient means for handling organic and inorganic materials and will be used more in the future. Positive and negative pressure systems, used alone or in combination, solve many problems that no other type of conveyor can attempt. The air system eliminates many moving parts, thus reducing maintenance. The operation is dustless due to air-tight construction. Sanitation can be kept at a maximum, and interbatch contamination danger is avoided.

By the usage of pneumatics, bulk materials can be quickly unloaded from bulk trucks or railroad cars, transported to bulk storage tanks, brought from storage tanks to the mixing area, and distributed to mixed feed bins for final handling. Materials conveyed by an air stream travel at an average rate of 5,000 ft. per minute. Even at this speed, accurate amounts of materials can be conveyed directly to a scale hopper for weighing.

Elmer E. Garnsey

Materials brought to the scale hopper for weighing have usually been conveyed from overhead bins by gravity or mechanical action. With pneumatics, overhead storage for mixing ingredients can be eliminated as feed materials can be moved by air in the most direct manner. In addition, capacities in excess of 30 tons per hour are possible with the use of pneumatics.

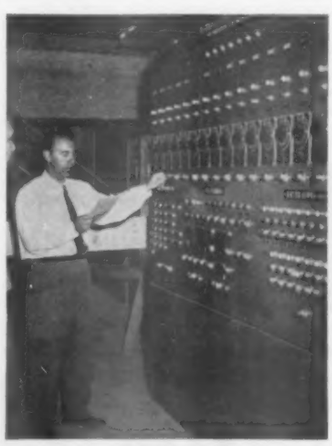
The dustless efficiency provided in an air system yields nearly a 100% utilization of the original feed product. As the system is self-cleaning, points where dirt or infestation can build up are greatly reduced. Materials varying in size between powders of 200 mesh and pellets as large as 2" by ¾" are easily transported.

Mill of the Future

As our composite feed mill of the present and future takes shape, the design of the mill shell can be determined. Through emphasis on outside bulk storage and pneumatic conveyors, the need for multi-floored operations becomes less vital. Mixing, grinding, pelleting and specialty machinery can be housed adequately on a single floor. The pneumatic system tailors itself extremely well to this design. Installation is merely a matter of placing the pipe over, under, or between the machinery units. Since pipes can be run in any direc-

Greater use of one-floor plants is predicted for the future. One such plant, specializing in broiler feed production, is illustrated here. Specialty production is another possible trend which may grow. The mill shown here is that of Red Hat Feed Mills at Tunnel Hill, Ga.

One of the trends in feed processing which will expand, the author of the accompanying article forecasts, is the use of pneumatics to move materials. In this picture, bran is being unloaded by air with a Sprout-Waldron Pneu-Vac system.



Automation, with push-button, automatic proportioning and mixing, has already reached into many feed plants, and it is believed that in the future, mills will become even more automatic than they are now. In this picture, a batch is being set up on an electronic control panel in the new feed plant of the Inter-County Farmers Cooperative Assn. at Woodridge, N.Y.

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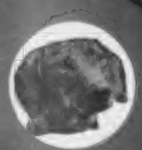

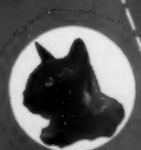

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The single-floor feed mill may, or may not, be equipped for the manufacture of premixes that are added to the main batches in small quantities. With the emergence of hormones, antibiotics, trace minerals and other additives as important ingredients in finished feed, special provisions are necessary in the mixing of these special additives. The futuristic feed mill usually will not be equipped to produce these premixes, but might purchase them from a mixing plant specializing in this operation alone. A carrier agent such as cottonseed meal or linseed oil meal provides the vehicle for minute quantities of these materials. The premix itself must be a blend of superb accuracy to enable the additives to achieve the proper distribution within the carrier material. In addition, precautionary health measures are vitally important when hormones are to be included in the premixes. Lack of proper precautions by the average feed miller in this phase of mixing can have dangerous results.

More Specialty Mills

In this age of specialization, feed mills of the present and future will concentrate on specialty production. Mills located within areas committed to a given livestock enterprise usually will turn out mixed feed tailored to the feed requirements of that class of livestock.

Thus, mills in areas of poultry predominance will concentrate on several varieties of poultry feed alone. Switching between mixes designed for varieties of livestock such as cattle, hogs, sheep, poultry and rabbits reduces the efficiency of any given feed milling enterprise.

Without doubt, mills located in areas having a balanced livestock economy will continue to turn out a variety of mixes for varied classes of livestock. However, in other areas, specialization will be the "modus operandi."

Lower Labor Costs

Costs of feed milling in the future will have to be kept at a minimum. High labor and power costs, coupled with competition and rising costs of feed and machinery, dictate a low formula feed production cost. It should be possible to achieve a future production cost at an extremely low level per ton, providing the indicated requirements for feed handling and processing are met in full.

With all factors equal in terms of power cost, depreciation, interest on investment, etc., the most dramatic saving made by the automatic feed mill is in cost of labor. Here is an example of what can be done by using the labor factor alone.

Let us take a typical feed milling operation presently turning out 120 tons of formula feed per day with adequate old equipment and a large labor force. This plant employed the following men to achieve its production: mixing and warehouse crew, 43 men; truck loading crew, 12 men; car unloading crew, 9 men. The above labor force represents a total of 64 men. The hourly wage of these men including benefits and bonus amounted to $1.42 per hour. Based on mill capacity, the average labor cost per ton of production was $6.88.

The feed mill under discussion now shifts to an automatic operation. However, it maintains the same daily production for a period to determine its cost comparisons. With the modernized operation, we have the following labor situation: mixing and warehouse crew, 14 men; truck loading crew, 8 men; car unloading crew, 2 men. The labor force employed by the modernized feed mill totals 24 men. Using the same average hourly wage for mill employees, the cost per ton of mixed feed drops to $2.28. Comparing labor alone, we find a savings of $4.60 per ton of mixed feed. On a monthly basis of 160 production hours, the savings to the mill operator in labor amounts to $9,120.00.

The next dramatic savings to this feed milling operation, after modernization, comes in the form of bulk handling. The mill in the past had purchased 4,200 tons of ingredients per month. Seven hundred tons of the above amount was in bag form. Due to additional bulk storage created in the modernized plant, a savings of $3 per ton was effected for the tonnage formerly purchased in bag form. This amounts to $2,100.00. When added to the labor saving of $9,120.00, the total monthly saving was over $11,000.00 for the feed mill operator.

Processing and Handling

We have now established the basic design, method of operation and cost saving features of our modernized or future feed mill. Let us discuss briefly the processing and handling stages which feed materials may go through enroute to finished form. Feed materials will enter the mill from bulk trucks or railroad cars. To unload bulk ingredients, a motor-driven unloader unit attached to the air system can be used which digs itself continuously into the feed and forces the material to enter the air system. The product is then conveyed directly to a scalping shoe and bulk receiving scale where it is cleaned and weighed. The material is then blown under positive pressure to the bulk storage bins where it is stored for later use. All grains, high protein concentrates, meat scraps, etc., enter the system by the same channels. However, liquids such as molasses and animal fats are pumped directly to their respective vats through a pipe system.

Once the system has been charged with basic feed materials, the ingredi-

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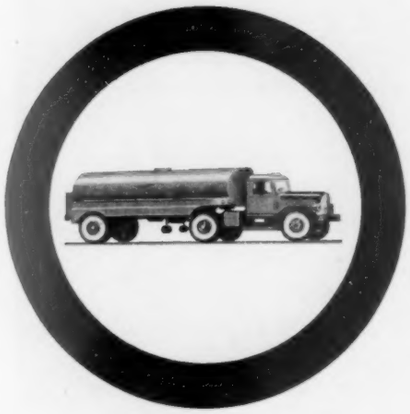

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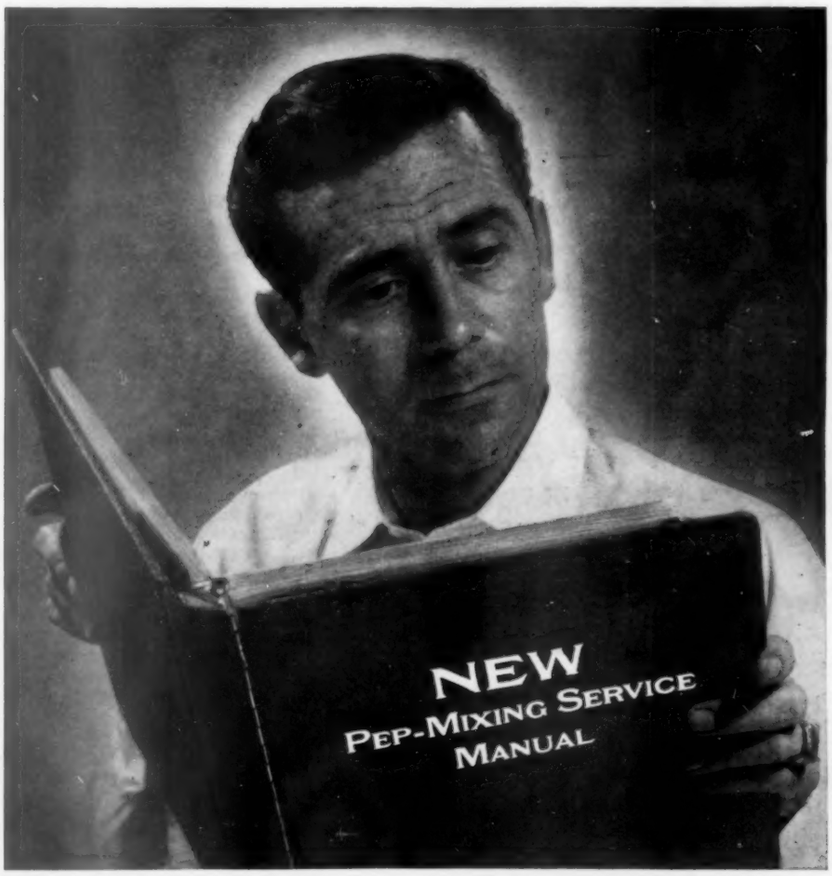

Let's look realistically at your custom grinding and mixing business. Is it making money for you? Or is it just a service rendered by you . . . one that wipes out other profits that you are entitled to? If this is your problem, let's talk about it together, for Ful-O-Pep has a new Pep-Mixing Program that will help you make money even at competitor's rates.

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Ful-O-Pep's new Pep-Mixing Program is not just to sell you a few concentrates for mixing. It's a *sound business plan!* It includes accurate costs of operation studies, layouts, and plans for lower cost, more efficient mixing, as well as famous Ful-O-Pep quality feeds with 1000 formulas and 13 concentrates to fit local conditions.

For more information, contact your local Ful-O-Pep Representative, or write: The Quaker Oats Company – Ful-O-Pep Pep-Mixing Dept. – Merchandise Mart – Chicago 54, Illinois.

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ents then can be brought into the grinding, weighing, and mixing unit by another air system.

Feed grains, conveyed to size reduction machinery such as hammermills and corn cutters, are always passed over magnetic protection devices that eliminate danger from metal particles to machinery and livestock.

Once the feed batch has passed through the central scale hopper and batch mixer, it proceeds into a continuous high speed mixer. Here molasses and fat are added to the batch enroute to a diversion point. From the diversion point, the mixed feed can be routed to an automatic sacking scale, a pelleting and crumbling operation, or directly to the bulk truck delivery area. Occasionally, the finished feed batch follows a different alternate and is blown to a holding bin for later disposition. Future operations will, in most cases, utilize the pelleting diversion most frequently.

Pelleting and crumbling operations are factors of increasing importance to modern feed millers. Demand for feed densification in the form of range cubes and poultry pellets has launched pelleting and crumbling processes to a new degree of prominence. It has been shown that a densification through pelleting increases the feed and water consumption of animals and poultry. At the same time, it reduces waste, dust, cannibalism and labor costs. Pellets form a completely balanced ration and are an efficient means for preserving feed freshness.

Throughout the flow pattern, pneumatics as a conveying medium is emphasized. Occasionally, there are instances such as removing molasses feed from surge bins where the pneumatic conveyeor has limitations. In these situations, augers or belt conveyors are used to move the material out of its particular position. Once back in the air stream, it resumes its normal 60-mile-per-hour course for distribution and processing.

The feed mill of the future may rely to a greater extent on bulk delivery of feed directly to storage tanks of consumers. Bulk trucks having capacities of from 6 to 20 tons will receive their loads of finished feed from the mill pneumatic conveyor. These trucks will drive directly to the consumer's bulk receiving station that has been equipped to receive its batch from the truck.

Where a pneumatic bulk truck is used, the unit can be used for bulk pick-up as well as delivery. By reversing the air connections on the truck's power unit, materials can be sucked into the truck from outside sources at a rate of 8 to 10 tons per hour. When unloading, the air system can deliver grain, pellets or mash feed batches at a rate of 18 to 24 tons per hour.

Future feed mill operations probably will combine many of the features discussed here. Because of some of these features, feed mills of today are much more efficient than those even of five years ago.

However, it is obvious that we have only scratched the surface where futuristic feed manufacturing techniques are concerned. Completely automatic automobile chassis factories are now in operation. It is conceivable that the feed mill of tomorrow will be an electronic marvel capable of volume production, while utilizing a labor force of one or two men to maintain and operate the complete installation.

Feed manufacturers are becoming aware of the advantages to be gained by purchasing ingredients in bulk, handling these materials pneumatically, reducing labor to a minimum and side-stepping chances for human error through automation.

In the age of feed mill automation, plant modernization is essential. In the future, obsolescence will be an expense most of us can ill afford.

Dr. Conrad Elvehjem Gets Spencer Award

KANSAS CITY—Dr. Conrad A. Elvehjem, well known biochemist from the University of Wisconsin, received the 1956 Charles F. Spencer award for meritorious contribution to agricultural and food chemistry in Kansas City recently. The presentation was made at the fall chemical conference of the Kansas City Section of the American Chemical Society.

The Spencer award was founded two years ago by Kenneth A. Spencer, president of the Spencer Chemical Co., in his father's memory. The award is administered by the Kansas City American Chemical Society Section. Dr. Elvehjem received the Spencer medallion and a $500 honorarium for his award-winning contribution to food chemistry.

Dr. Elvehjem, chairman of the biochemistry department and dean of the graduate school at Wisconsin, delivered the Spencer award address at the presentation ceremony. He discussed his work on animal nutrition, notably the relationship of the proteins to specific deficiencies. He also detailed his studies on amino acid imbalance and its importance in nutrition.

During his career, Dr. Elvehjem has pioneered in studying the relationship of nicotinic acid as the specific anti-pellagra vitamin. His work has led to the supplementing of basic foods for improved nutrition.

The Spencer award was presented by C. Y. Thomas, vice president-operations of the Spencer Chemical Company.

2 IMC Dividends

CHICAGO—The board of directors of International Minerals & Chemical Corporation has declared the regular quarterly dividend of $1 per share on the 4% cumulative preferred stock, payable Dec. 30, and a quarterly dividend of 40¢ per share on the common stock, payable Jan. 2.

Dividend payments on both classes of stock will be made to shareholders of record Dec. 14.

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New Feed Law Plans Outlined At Missouri Conference

By THOMAS E. LETCH
Feedstuffs Editorial Staff

COLUMBIA, MO. — Plans for a new Missouri feed law received unanimous endorsement by those attending the Feed Conference Nov. 12-13 at the University of Missouri.

A. Earl Straub, Missouri feed control official, discussed the possible new law at the conference banquet the evening of Nov. 12 in the Tiger Hotel.

Mr. Straub said that plans are to pattern the law after the uniform feed law as adopted by the Association of American Feed Control Officials. He indicated, however, that feed people are invited to comment on provisions of the proposed law so that the bill which will be presented to the legislature will reflect the thinking of Missouri's feed industry.

Mr. Straub said that among other things, the new law would: (1) Cover dog food; (2) eliminate the nitrogen free extract provision; (3) eliminate the provision that specifies what weight feed packages can be; (4) possibly change registration from annual to permanent; (5) provide for a hearing before any registration is cancelled; (6) provide regulations covering custom mixed feed; (7) strengthen enforcement provisions.

Oscar Straube, Pay Way Feed Mills, Inc., Kansas City, board chairman of the American Feed Manufacturers Assn., introduced Mr. Straub and stressed the fact that speedy action is needed if the law is to be presented to the state legislature when it convenes in January. The present law dates back more than 25 years, he said, and does not meet the current needs of the industry.

University of Missouri personnel, along with several outside college and industry speakers, presented a variety of nutrition and management topics at the conference. Attendance was about 150 persons.

POULTRY: Information on amino acids as related to broiler rations was presented by a number of speakers. Dr. H. M. Scott, University of Illinois; Dr. Richard Gordon, Monsanto Chemical Co., St. Louis; Dr. J. E. Savage, University of Missouri, and Dr. B. L. O'Dell, University of Missouri, all dealt with the problem of proper protein balance in the ration.

Amino acids are all-important in the formulation of today's poultry rations, Dr. Scott said. The levels and balance of the amino acid used to meet the protein requirement of a ration are most important.

"It's for this reason that the Illinois station has devoted considerable effort to studies concerned with factors that influence amino acid requirements," he said. "Major emphasis has been placed on the relationship between amino acids and energy."

Two Approaches

Two approaches have been used in the Illinois work to find the basic principles in such a relationship, Dr. Scott noted.

One approach is to start with a corn-soya ration (20 to 25% protein), which gives excellent growth, and upset the relationship to varying degrees by the addition of supplemental fat (energy). This results in inferior growth and feathering.

By adding graded levels of protein from soybean meal to the fat-containing diets, the amount of protein needed to equal or exceed growth obtained on the basal ration can be determined, he said.

The most useful approach, he indicated, involves the use of a basal ration containing a high level of energy and a deficiency of a known amino acid.

In this approach, graded levels of the amino acid in short supply are added to the basal ration and its performance is determined for each percentage level of the amino acid added.

"The absolute amount of the amino acid needed for maximum performance can be found in this manner," he said.

Improved Performance

From this information, it has been possible to improve the performance of practical broiler rations. Dr. Scott outlined one such ration that he said would produce male broilers averaging 3.19 lb. at eight weeks with a feed conversion of 1.93.

The ration, in parts per 100 lb. feed, is as follows: Ground yellow

(Continued on page 92)

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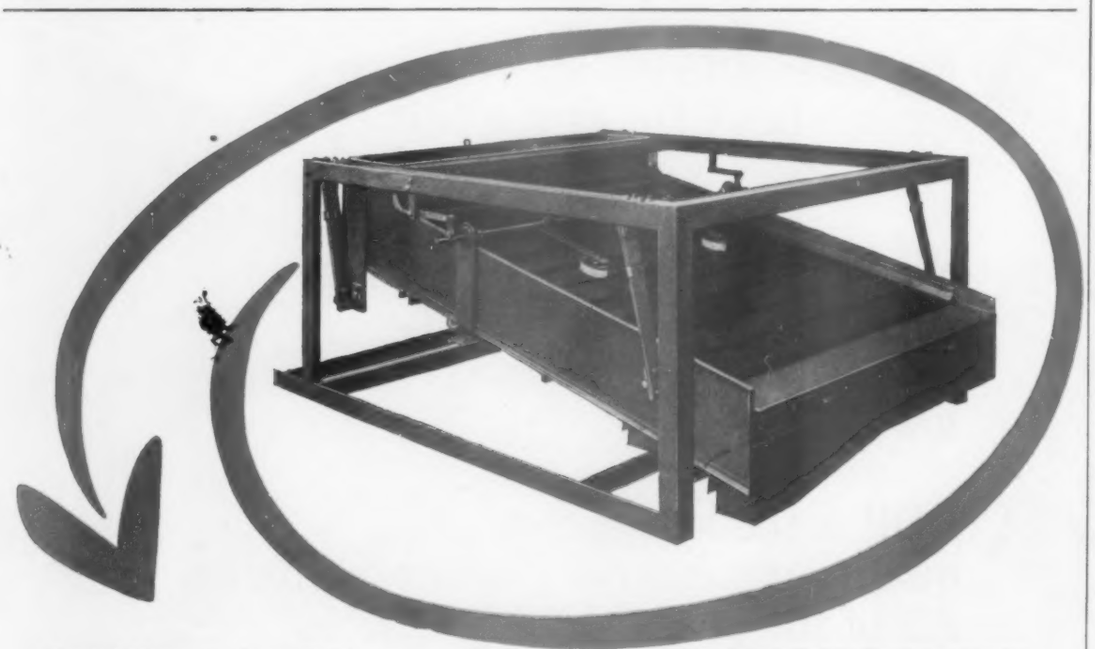

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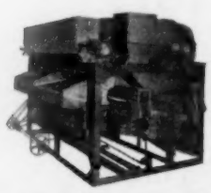
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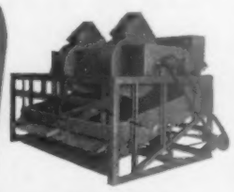
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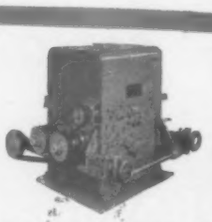
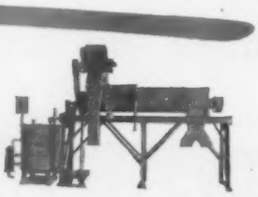
OK Bagging Scale—Series A, B

Horizontal Batch Mixer


Out Crimper—Single Pair Roller Mill


Duplex Agitator Molasses Mixer

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TERRAMYCIN® IN FEED PREVENTS AND CONTROLS SHIPPING FEVER COMPLEX!

BRAND OF OXYTETRACYCLINE

5 year tests on over 25,000 animals show: —Death losses reduced 80%—Number of animals requiring additional treatment reduced by 83%

SUMMARY OF 10 RECENT TERRAMYCIN TRIALS ON SHIPPING FEVER COMPLEX

	CONTROL	TERRAMYCIN ¼ gm/DAY
No. of trials	10	10
No. of animals	6117	4533
No. requiring additional treatment	625	80
Per cent requiring additional treatment	10.2	1.77
Mortality, number died	59	10
Mortality, per cent	0.97	0.22

- **Terramycin both treats and helps prevent shipping fever**
- **Terramycin goes to work immediately**
- **Terramycin imparts no shock to throw animals off feed as do injections**
- **Terramycin can be administered to a sick, well and/or exposed animal**
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Up to now little could be done. Medication has been costly, requiring the use of bacterins and agressins, antiserums, vaccines and individual handling of animals.

Now carefully controlled tests over a five-year period on over 25,000 animals show shipping fever can be prevented and controlled by Terramycin in the feed.

Tests also show Terramycin improves over-all health levels . . . helps calves adjust to feedlot rations faster . . . gives more economical gains.

Findings Now Make Possible Important New-Type Feed

New Feed Law Plans Outlined At Missouri Conference

By THOMAS E. LETCH
Feedstuffs Editorial Staff

COLUMBIA, MO. — Plans for a new Missouri feed law received unanimous endorsement by those attending the Feed Conference Nov. 12-13 at the University of Missouri.

A. Earl Straub, Missouri feed control official, discussed the possible new law at the conference banquet the evening of Nov. 12 in the Tiger Hotel.

Mr. Straub said that plans are to pattern the law after the uniform feed law as adopted by the Association of American Feed Control Officials. He indicated, however, that feed people are invited to comment on provisions of the proposed law so that the bill which will be presented to the legislature will reflect the thinking of Missouri's feed industry.

Mr. Straub said that among other things, the new law would: (1) Cover dog food; (2) eliminate the nitrogen free extract provision; (3) eliminate the provision that specifies what weight feed packages can be; (4) possibly change registration from annual to permanent; (5) provide for a hearing before any registration is cancelled; (6) provide regulations covering custom mixed feed; (7) strengthen enforcement provisions.

Oscar Straube, Pay Way Feed Mills, Inc., Kansas City, board chairman of the American Feed Manufacturers Assn., introduced Mr. Straub and stressed the fact that speedy action is needed if the law is to be presented to the state legislature when it convenes in January. The present law dates back more than 25 years, he said, and does not meet the current needs of the industry.

University of Missouri personnel, along with several outside college and industry speakers, presented a variety of nutrition and management topics at the conference. Attendance was about 150 persons.

POULTRY: Information on amino acids as related to broiler rations was presented by a number of speakers. Dr. H. M. Scott, University of Illinois; Dr. Richard Gordon, Monsanto Chemical Co., St. Louis; Dr. J. E. Savage, University of Missouri, and Dr. B. L. O'Dell, University of Missouri, all dealt with the problem of proper protein balance in the ration.

Amino acids are all-important in the formulation of today's poultry rations, Dr. Scott said. The levels and balance of the amino acid used to meet the protein requirement of a ration are most important.

"It's for this reason that the Illinois station has devoted considerable effort to studies concerned with factors that influence amino acid requirements," he said. "Major emphasis has been placed on the relationship between amino acids and energy."

Two Approaches

Two approaches have been used in the Illinois work to find the basic principles in such a relationship, Dr. Scott noted.

One approach is to start with a corn-soya ration (20 to 25% protein), which gives excellent growth, and upset the relationship to varying degrees by the addition of supplemental fat (energy). This results in inferior growth and feathering.

By adding graded levels of protein from soybean meal to the fat-containing diets, the amount of protein needed to equal or exceed growth obtained on the basal ration can be determined, he said.

The most useful approach, he indicated, involves the use of a basal ration containing a high level of energy and a deficiency of a known amino acid.

In this approach, graded levels of the amino acid in short supply are added to the basal ration and its performance is determined for each percentage level of the amino acid added.

"The absolute amount of the amino acid needed for maximum performance can be found in this manner," he said.

Improved Performance

From this information, it has been possible to improve the performance of practical broiler rations. Dr. Scott outlined one such ration that he said would produce male broilers averaging 3.19 lb. at eight weeks with a feed conversion of 1.93.

The ration, in parts per 100 lb. feed, is as follows: Ground yellow

(Continued on page 92)

Fortify your feeds with
LIVE YEAST CULTURE
(Especially Prepared for Dry Mix Feeding)
Supplies: Vitamin B_{12} activity, live yeast digestive enzymes, B complex vitamins, plus other potent unidentified factors. Improves appetite, digestion (including rumen aid), health, growth, production. Increases feed utilization — lowers feed cost.
Live yeast values improve feeding results in recent State conducted tests.
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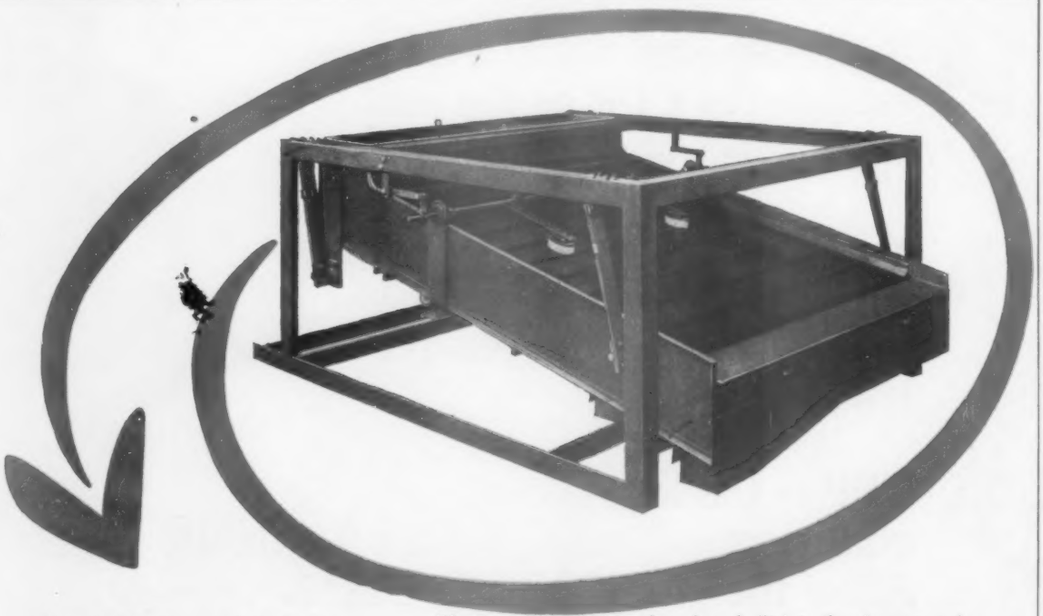

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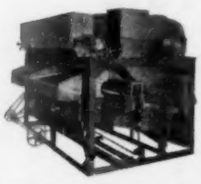
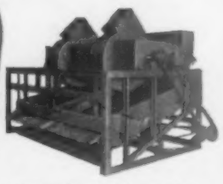
EUREKA
SNAPPY SHAKER
Now, more than ever, you'll find this Eureka a most-wanted addition to, or replacement of your present equipment.

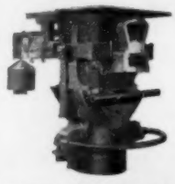
Many new, fine features have been built into the always-popular Eureka Snappy Shaker. Features which give you more rapid handling and uniform cleaning in screening oversize and fines from pellets and crumbles; scratch grains; mash or dairy feed; bulky, heavy or light fluffy stocks . . . in fact any product requiring vigorous, intense screen action. Economical to operate, efficient in operation, dependable and sturdy in construction, the Eureka Snappy Shaker will fulfill your every need. Single or double deck—each in 7 sizes. Eureka-Barbeau Eccentricless Drive, of course. For details, request Snappy Shaker Bulletin No. 503.


Super Cleaner—Receiving Separator


Hi-Capacity Receiving Scalper

Vertical Batch Mixers

Corn Cutters and Graders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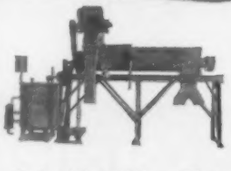
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Findings Now Make Possible Important New-Type Feed

Help feeders solve $25,000,000-a-year shipping f e

NEW CONDITIO N

CONTAINING TE

BRAND OF OXYTE

Opportunity this winter to make and establish a new extra-profit specialty feed every feeder needs and will want to use

Here's a program—based on research and field trials—to help you get your share of this new feed market

---

For years feeders have needed a feed to help "condition" animals upon arrival at feedlots . . . one to prevent and treat shipping fever . . . one that helps animals snap back to high health levels . . . one that helps them adjust to feedlot rations.

Now, these new findings on Terramycin make such a feed possible. A feed so versatile, so effective it names itself as a "CONDITIONING FEED."

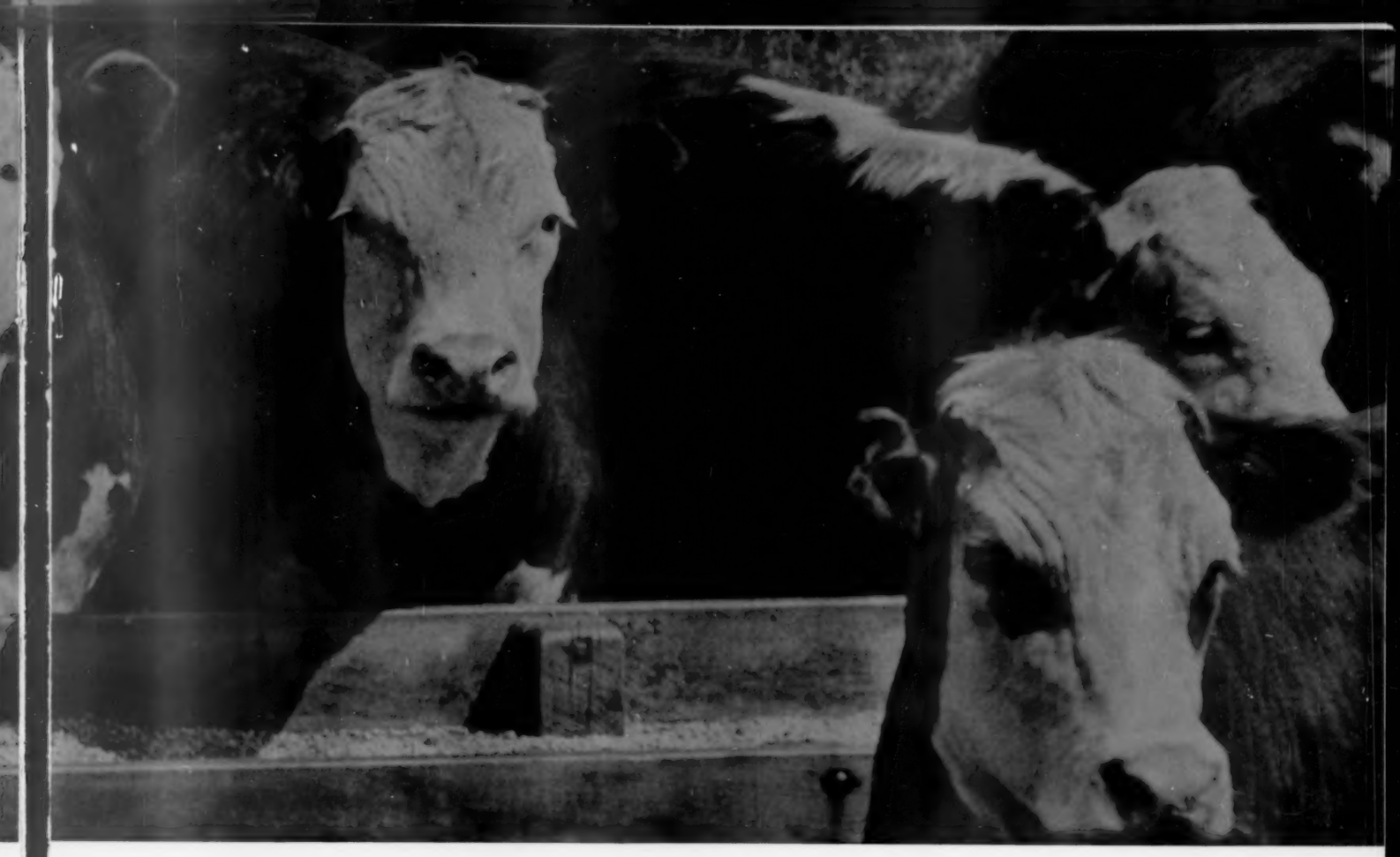
Pfizer believes the interests of the feeder and feed manufacturer alike are best served if this new conditioning feed is manufactured by modern precision methods.

Then the feeder is assured of palatability, the correct amount of antibiotic, and a good balance of other nutrients.

In addition, this new conditioning feed opens up a big opportunity for the feed industry. Here's a feed every feeder needs and will want. It can be a line leader for your regular beef supplements.

How You Can Make a Conditioning Feed

Research demonstrates that 500 grams of Terramycin per ton of conditioning feed is the level giving most consistent results plus greatest protection. This level provides 250 mgs. of Terramycin activity in each pound of supplement. Feeding of two pounds of supplement per head per day for 3 to 5 days is recommended for



ever problem. Open big new feed market with

NING FEEDS

RRAMYCIN®

TRACYCLINE

treatment or prevention of shipping fever in calves under 450 lbs.—50 lbs. of TM-10 (Terramycin Animal Mix) per ton of feed gives this recommended level.

It has also been our experience that steers eat more when the conditioning feed is pelleted to a rather soft consistency and in 3/16 to 1/4 inch size.

Some feed manufacturers are already formulating a conditioning feed. Some plan to include Terramycin in range cubes for use during stress periods.

Your Pfizer representative will be glad to answer any questions you may have on this new conditioning feed and/or range cube.

When To Use a Conditioning Feed

When you offer customers a new feeding concept as well as a new multipurpose feed, you've got a powerful sales combination.

Here's a feeding program evolved from tests on over 25,000 animals and from extensive research into beef feeders' needs:

When the calves arrive at feedlots, their ration is supplemented with a conditioning feed for 3-5 days.

This helps prevent a shipping fever outbreak and helps animals already sick to recover fast.

A 3-5 day conditioning feeding program also helps calves hold high health levels and adjust to feedlot rations quicker.

After this period, regular feedlot rations are used.

But if extreme temperature changes or other stresses come up during the feeding period, the feeder should again use his conditioning feed for another 3-5 day period.

This conditioning program is inexpensive to the feeder in terms of results obtained.

Promoting Conditioning Feed Concept

To bring the feeder specific uses of these new conditioning feeds, Pfizer is starting immediately a national advertising and educational program.

To tie in your brand of conditioning feed with this program, we suggest you consider use of the term "Conditioning" in your feed name such as: "YOUR BRAND" CONDITIONING FEED.

You may want to pinpoint usage even more and call your feed a "5-DAY CONDITIONING FEED."

Here's what your tag can say when your conditioning feed contains recommended levels of Terramycin

FRONT

100 LBS. NET WT.

Manufacturer's Trade Mark

(NOT Name of Feed)

OXYTETRACYCLINE MIX

(or mixture)

Active Drug Ingredient

OXYTETRACYCLINE (TERRAMYCIN®)

equivalent to

Oxytetracycline Hydrochloride Activity } .25 grams per lb. = 500 grams per ton

A MIX for the:

1. Prevention of the Shipping Fever Complex of cattle

2. Treatment of the early stages of the Shipping Fever Complex of cattle

3. Treatment of Bacterial Diarrhea, also known as scours

Incorporated in

"YOUR BRAND"

CONDITIONING FEED

GUARANTEED ANALYSIS

Crude Protein, not less than.....%

Fat, not less than.....%

Fiber, not more than.....%

INGREDIENTS

Manufactured by

YOUR NAME AND ADDRESS

IMPORTANT TO FOLLOW DIRECTIONS ON BACK OF TAG

Terramycin is the registered Trade-mark of Chas. Pfizer & Co., Inc. for its brand of oxytetracycline.

BACK

HOW TO USE

"YOUR BRAND"

CONDITIONING FEED

CONTAINING

500 GRAMS OF OXYTETRACYCLINE (TERRAMYCIN®) HYDROCHLORIDE ACTIVITY PER TON OF FEED

PREVENTION

To prevent the shipping fever complex, feed "Your Brand" Conditioning Feed at these rates:

Calves up to 450 lbs. — 2 lbs./head/day for 3 to 5 days (no less than 3 days, preferably for 5 full days) either before shipping and/or after receiving cattle in the feedlot.

Feeder Calves up to 750 lbs. — 4 lbs./head/day for 3 to 5 days (no less than 3 days, preferably for 5 full days) either before shipping and/or after receiving cattle in the feedlot. (Feeder cattle 750 lbs. and up feed 5 to 6 lbs./head/day for 3 to 5 days.)

TREATMENT

To treat the early stages of the shipping fever complex, feed "Your Brand" Conditioning Feed in accordance with the above prevention schedule. Feed at the onset of disease symptoms*. In some instances it may be necessary to feed for at least 8 days. If no improvement is noted at the end of this time have the diagnosis re-examined.

*NOTE: Shipping Fever is indicated when a respiratory illness is accompanied by elevated temperature in animals recently shipped. Symptoms are tired appearance, obvious chilling, reduced appetite, and a soft cough. Diarrhea or constipation may occur. Stress factors are predisposing causes of shipping fever — especially excitement, exhaustion, exposure, and changes of feed and water attending shipment of animals. Animals too weak to eat should be treated individually with a more concentrated form of Terramycin such as drinking water treatment. When animals are subjected to stress, feed (Your Brand Conditioning Feed) for 3 to 5 days to prevent shipping fever complex.

CAUTION: Successful treatment depends upon correct diagnosis and early medication. If diagnosis is in doubt, consult a veterinarian. *Do not feed "Your Brand" Conditioning Feed less than 3 days,* and it is preferable to feed for 5 days.

No Formulation Problem

Sample tags are available giving established recommendations and directions for use of a conditioning feed containing Terramycin at 500 grams per ton.

If you follow this suggested labeling, you do not have to submit a new drug application or obtain certification from FDA.

You need formulate only one conditioning feed because feeders can vary the amount of supplement fed daily to adjust antibiotic intake for larger animals.

Your Pfizer representative will be glad to come in and discuss the opportunity these NEW CONDITIONING FEEDS hold for you and answer any questions you may have.

Terramycin® for Beef

BRAND OF OXYTETRACYCLINE

Pfizer

CHAS. PFIZER & CO., INC.

World's largest producer of antibiotics

630 Flushing Ave., Brooklyn 6, N.Y.
6460 West Cortland Street, Chicago 35, Ill.
7600 Ambassador Row, Dallas 7, Texas
1151 Chattahoochee Ave., N.W., Atlanta 2, Georgia
1500 16th Street, San Francisco 3, Calif.

FMA Feed Division Area Managers Named

Edward R. Willis

Bill Boyd

KANSAS CITY—Managers for the Brownwood and Hamilton, Texas, feed territories have been named by Flour Mills of America, Inc., announces George P. McCarthy, vice president and general manager.

In charge of the Brownwood territory is Edward R. Willis, who has been active in the feed business for more than 12 years. He joined FMA's feed division in August after having been with Universal Mills at Fort Worth.

Bill Boyd, manager of the Hamilton territory, has a background in diversified farming and was with Universal Mills for more than four years.

Both new territory managers are graduates of Texas Technological College, Lubbock.

Broiler Growers with Idle Houses Urged To Switch to Layers

RICHMOND, VA. — Virginia Department of Agriculture officials are suggesting that some former broiler growers convert their facilities to egg production.

Some farmers who have been raising broilers may have been discouraged by low prices and now have broiler houses sitting idle. This, say the officials, may represent an opportunity to do something about Virginia's deficit egg production.

Hollis Shomo, head of the poultry section of the department of agriculture, said that the state could use 2 million additional layers before reaching capacity for supplying the state, and, he added, somebody is going to put in those layers within the next few years.

Good broiler houses in good condition can be switched to layers without too much cash outlay, Mr. Shomo said. Some operators have already done it and are said to be well satisfied with the results.

"A house properly built for 10,000 broilers will handle 3,500 layers, since hens need three times as much space as broilers," the Virginia authorities tell farmers in a recent department bulletin. "To do the right kind of egg job—and if you don't do it right, you might as well stay out—you'll need an egg room with temperature and humidity mechanically controlled, proper feeders, adequate water and maybe some electric lights and roosts.

"If you're starting out, you can get by using one of your houses, or your one house, as a brooder to get chicks to laying age. But after that, one house will have to be set aside for that purpose. And it should be a good distance from other houses for disease protection. Later, if you want to put pullets on range, you'd need some shelters.

"The second big item in such a change-over is willingness to put some effort into producing top quality eggs. It can't be done without work, but if it's done right, it'll pay off."

Right now, producers were told, broilers in the house, with a four-times-a-year turnover, should bring the grower about $2,000 a year clear money, even with prices that go pretty low at some times of the year.

Eggs from that same house—say, 3,500 layers—and a good quality production, should be worth about $1.25 per bird to the producer, the Virginia bulletin said. Collecting and packing eggs 365 days a year and the extra equipment are the investment for that extra money.

Mr. Shomo said that somebody has to furnish the top quality eggs that the market wants, and the man who didn't make a go with broilers may be able to do well with egg production.

Technical Agricultural Products With Controlled Specifications

Agri-Tech Inc.

BOARD OF TRADE BLDG. • KANSAS CITY, MO.

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YOUR CUSTOMERS WILL APPRECIATE ITS *Quality*

Send for SAMPLES and QUOTATIONS

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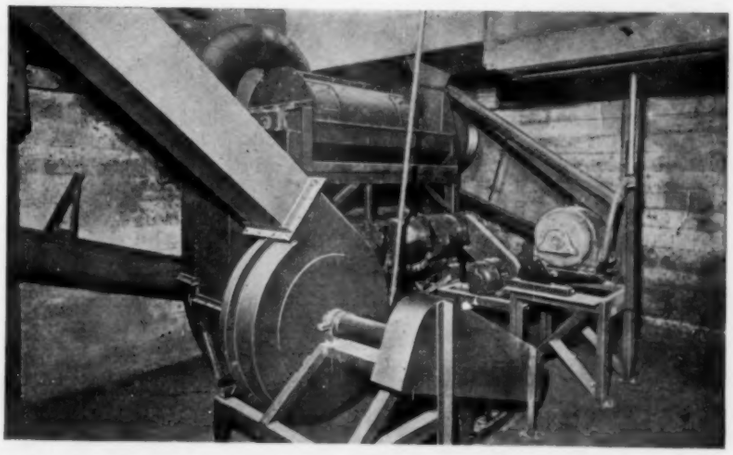
P. O. BOX 784 • HOUSTON, TEXAS

Eliminate Your CORN SHELLING BOTTLENECKS with

TRIUMPH No. 1200* CORN SHELLER CLEANING ATTACHMENT AND COB BLOWER

*Patent Applied For

View at right shows one of the two simple, proven Triumph No. 1200 Corn Shelling systems at the world famous Anderson Truck Terminal, Maumee, Ohio. These compact systems shell the corn; remove and blow away husks, silk and small trash particles with the cobs; discharge up to 1200 bushels of air cleaned shelled corn per hour. Six more Triumph No. 1200 Corn Shellers were installed by Anderson during 1955.



Semi-trailer Loaded with 22 Tons of Ear Corn is Dumped and the Corn Shelled and Air Cleaned in 30 Minutes with a

TRIUMPH No. 1200 CORN SHELLING SYSTEM

Listed below are just a few of the plants that already have installed two or more

TRIUMPH No. 1200 CORN SHELLING Systems

Saginaw Grain Co.....Saginaw, Mich.
Anderson Truck Terminal.....Maumee, Ohio
Wolfe Grain Co.....Shipshewana, Ind.
Cooperative Mills, Inc.....Seaford, Del.
Farmers Grain & Coal Co.....Mason City, Ill.
Clinton County Farm Bureau..Wilmington, Ohio

Southern Plants! Ask us about the Triumph No. 1200 Shuck Sheller

TRIUMPH Division
THE C. O. BARTLETT & SNOW CO.
4249 HARVARD AVENUE, CLEVELAND 5, OHIO

☐ Send me fully descriptive literature about your No. 1200 Shellers.
☐ Send a Sales Engineer.

Name_____ Title_____
Company_____
Address_____

New Nutrena Feed Plant Now in Operation; Called One of Most Automatic and Efficient in U.S.

Now in operation at Peoria, Ill., is a new feed plant which is described as "one of the most versatile, automatic and efficient" in the nation. The mill was built by Nutrena Mills, a subsidiary of Cargill, Inc., to serve the Illinois and Indiana area.

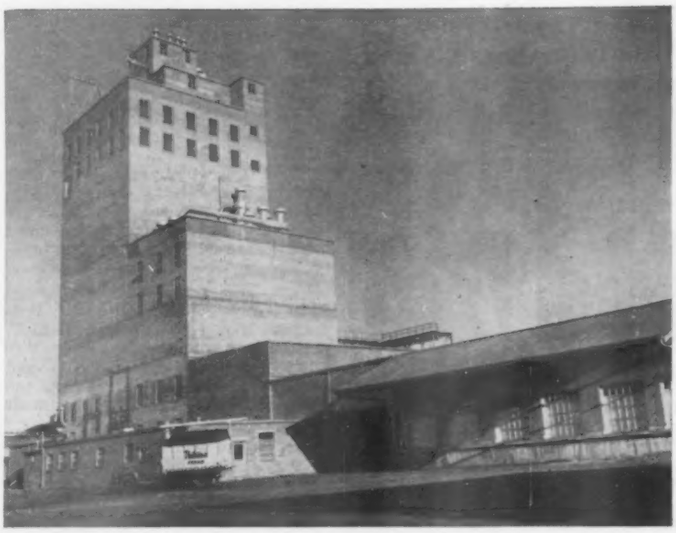
"The only way the plant could be more automatic," said J. C. North, Nutrena president, "would be if it took customers' orders and delivered to their doors. But we expect the Peoria division manager, Vern Dean, and the sales manager, Frank Carter, and their staff to handle that part of it, with pleasure. . . . In efficiency, this mill exceeds our wildest dreams of a few years ago."

A feature of the plant is an electronic control panel for automatic weighing, batch mixing and mash distributing. The control panel is the nerve center of the more than 225 relays, 200 motors, 22 remote control panels and 150 miles of wiring that supervise the manufacturing operation with an over-all accuracy said to be within 0.1%.

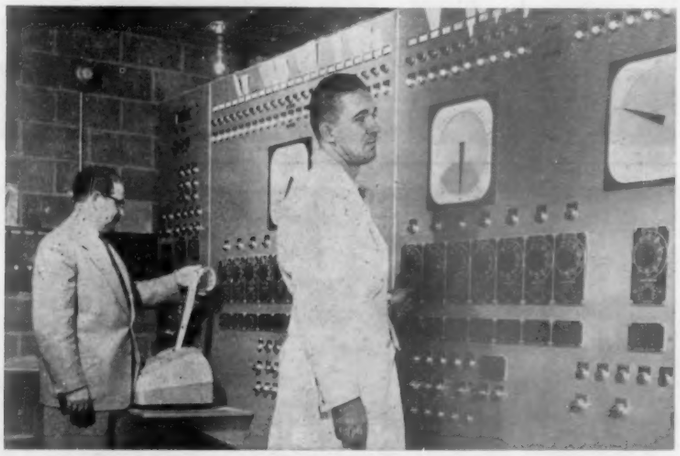
Precise measuring is carried even further in the premixes, Nutrena spokesmen note. The plant is equipped to handle 10 different premixes simultaneously. In making the premixes, the ingredients are finely scaled at accuracies within an ounce per ton of finished feed, it was pointed out.

Construction of the new plant brings to 14 the number of feed mills operated by Nutrena in the 26 states it serves. The plant was designed and built by Jones-Hettelsater Construction Co., Kansas City. The entire construction project was under the direction of D. V. McDonald, Nutrena vice president in charge of production, and M. M. (Nick) Noxon, regional production manager.

At the recent formal opening, Mr. North took occasion to compliment the persons and firms contributing to the design, construction and equipping of the plant. He pointed out that while in many average plants, two or three man-hours of labor are required to produce a ton of feed, the new mill

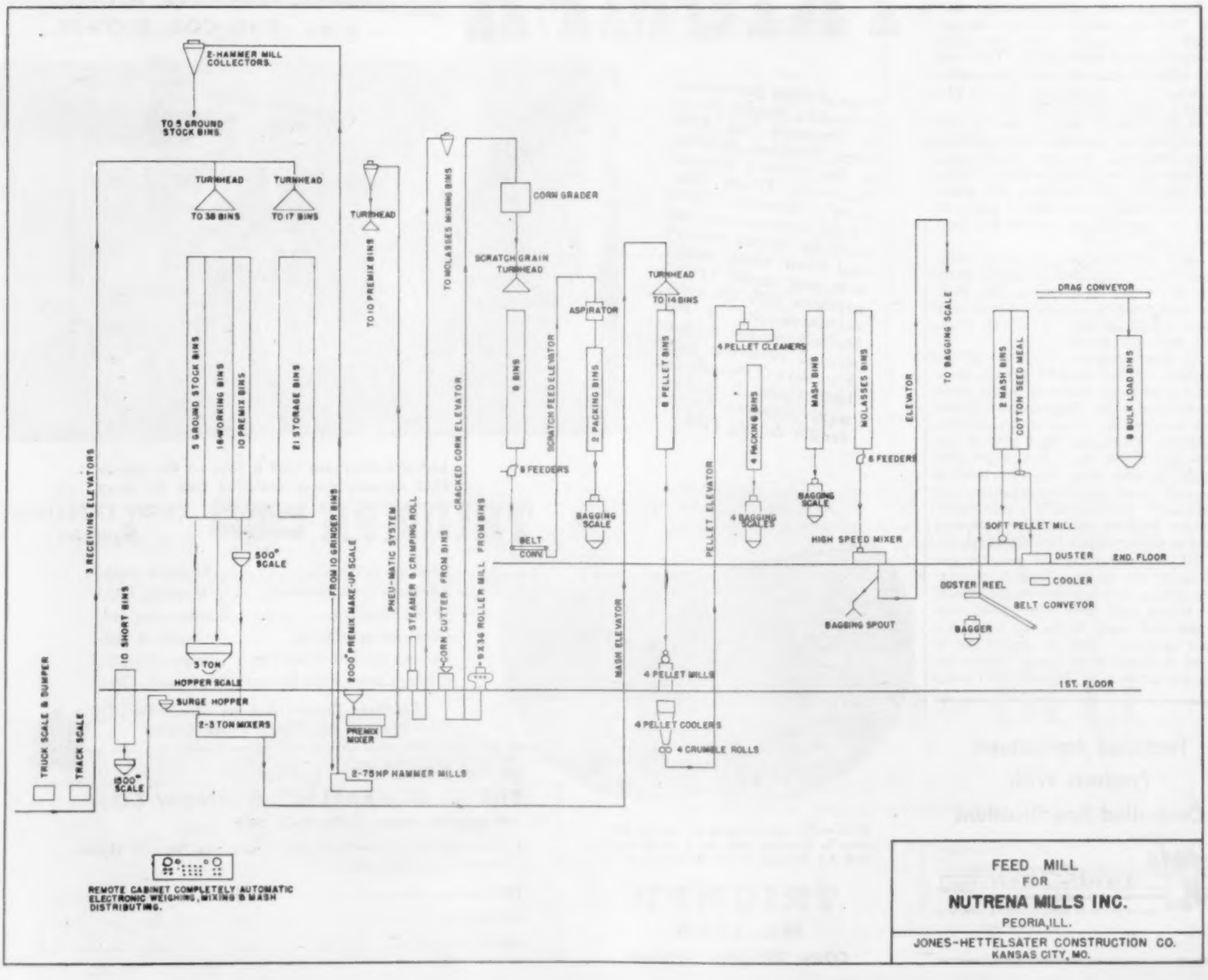


Here is an exterior view of the new feed plant of Nutrena Mills, Inc., at Peoria, Ill. The mill serves Illinois and Indiana.



This electronic control panel is used to direct the mixing of feed at the new mill. Vern C. Dean, Peoria district manager, checks the permanent record made for each batch, while Charles Saas, plant superintendent, sets a formula on the panel.

Simplified Flow Diagram



at Peoria requires less than one man-hour.

The concrete and steel plant towers 193 ft. above the Illinois River on the south side of Peoria. It is located on five acres of land at the foot of Sanger St., adjacent to yards handling 12 railroads. Truck entrances and exits have been provided. Adjoining warehouses have 15,000 sq. ft. of space for finished products and 6,000 sq. ft. for sacked ingredients. Laboratory facilities for quality checks and a large employees' locker room occupy another wing on the ground floor. The building is entirely fireproof and explosion-proof.

A modern, air-conditioned one-story building adjacent to the plant houses offices for the management and general sales staff. It is equipped with a full kitchen and basement meeting room to accommodate up to 150 persons. The room will be made available to dealer, breeder and feeder groups and other agricultural interests.

The plant can produce up to 45 tons of feed an hour in all forms—mash, pellets or crumbles—either sacked or in bulk.

Ingredient Handling

Incoming ingredients are handled principally in bulk. Finished feeds are moved to the warehouse by two overhead conveyors (for sacked feeds) or to outside hopper units for bulk loading of trucks. Separate liquid storage consists of tanks with capacity for 40,000 gal. molasses and 22,000 gal. animal fats.

Inbound grains come in bulk by truck or rail. Both unloading stations are equipped with Fairbanks-Morse weighing scales. Trucks are handled on a 50-ft. Air-O-Flex hydraulic truck dump. Rail cars are unloaded by means of a double Ehrsam power shovel. An electric car puller can handle eight cars in unloading position and 10 cars for loading.

Inbound raw materials are passed over a magnet for removal of tramp metallic substances and are carried to one of three elevators which lift the ingredients to the top floor. There, a Strong-Scott scalper and S. Howes cleaner ready grain for storage.

At this point, one of the advanced design features is noticeable—the ease of push-button routing. One man controls the entire flow to any of 60 bins.

A feature of this system is a 38-spout turnhead built by the K. W. Rodemich Co. which routes ingredients by remote control. It is hydraulically lifted, and as it turns over the circle of spout ends stops automatically at the one selected, insuring a completely sealed junction. It will handle 4,500 bu. an hour. Total grain storage amounts to 191,000 bu.

In addition to this large 38-bin turnhead, there is a smaller 17-bin turnhead which moves feed made into mash to working bins in the plant. Another turnhead supplies 10 premix bins; another directs materials from the main supply bins to small working bins over the scratch feed system; and still another directs mash to eight pellet bins.

Bins are equipped with Fuller bin-level indicators coupled with automatic cut-off devices. No bin can overflow. If an ingredient bin is empty, the line automatically shuts off, preventing improper mixing of feeds. No screw conveyors are used in this operation, assuring that materials of different kinds will not be inadvertently mixed, Nutrena officials pointed out.

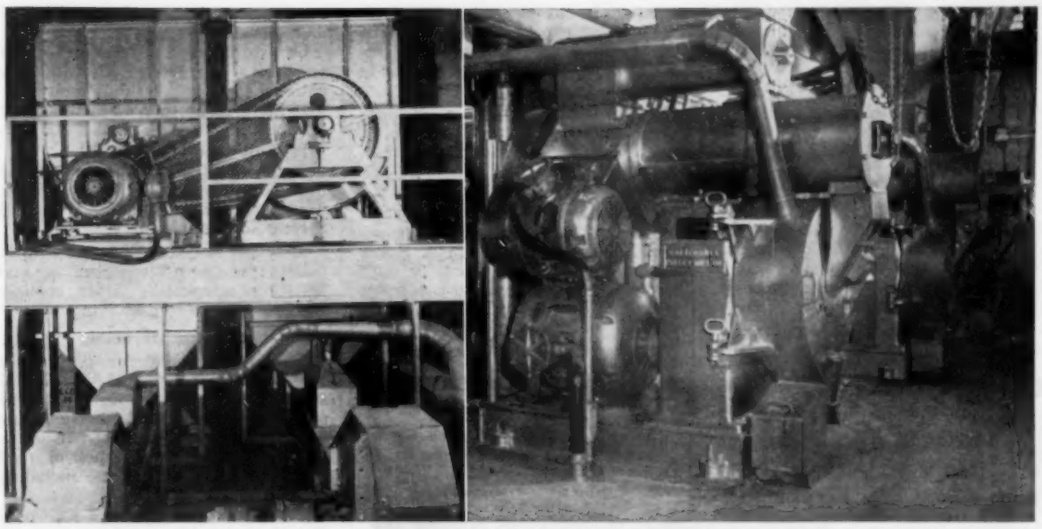
Raw materials to be ground go to two Jacobson hammermills in the basement and then are sucked back to the top to go into operating bins.

Mixing is accomplished by one operator at a central Richardson control panel in a separate room on the main floor. It is into this unit that Nutrena formulas are fed. Once the formula is set up on the panel (it may involve 18 of 23 bulk ingredients and one of 10 premixes), the device takes over, automatically weighs in the materials through three dial scales and delivers a three-ton batch alternately to two mixers. Without further direction or handling, the system will produce any pre-set number of batches up to 400.

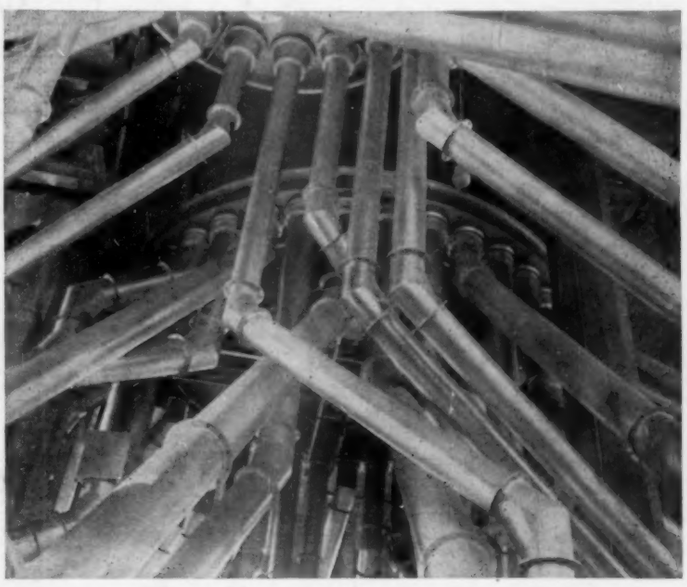
Ingredient flow in the plant is both by gravity and screw conveyor. The main system, however, from the main storage bins to the three-ton hopper scale, is entirely gravity flow, as is the flow to the premix equipment.

In connection with the Richardson control, there is a device to print a permanent record of each batch of feed. It is called a digital totalizer, and by means of an analog-to-digital converter automatically records batch number, date, hour, formula number, all ingredients by weight, and the bin from which each came.

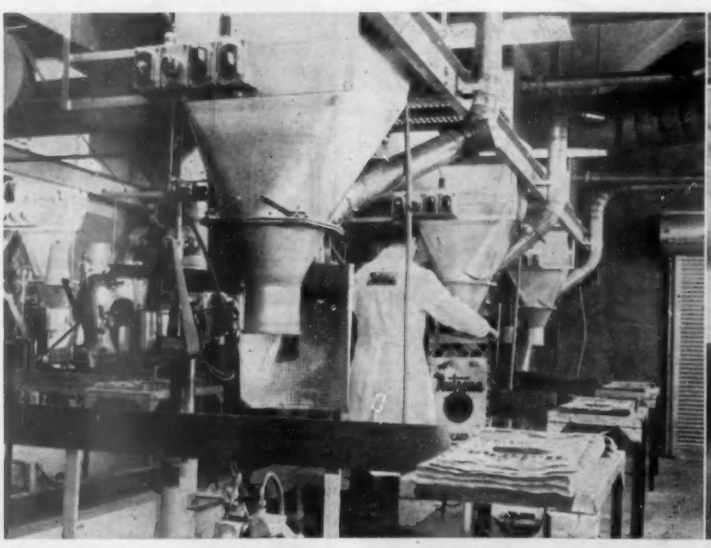
If at any point in the operation, through a misfunction of equipment



As shown in the picture on the left, feeds are mixed in two 3-ton Strong-Scott horizontal batch mixers. The mixers receive formulas weighed in each 2½ minutes from a combination of three scales overhead. Batches are received alternately by the two mixers, are mixed for five minutes and are emptied into special conveyors below and taken to processing bins. Nutrena officials note that the conveyors, imported from Switzerland, are self-cleaning so that portions of different formulas are not mingled. The pelleting operation, illustrated on the right, employs three California Century pellet mills. After pelleting, the feed goes into California coolers.



A large hydraulicaally operated turnhead at the top of the mill directs ingredients from three elevator legs to any of 38 spouts leading to storage bins. It will handle up to 4,500 bu. per hour and operates entirely by push-button. In addition to this large turnhead, there are several other smaller turnheads feeding material into other bins.



The packing floor, shown in the picture on the left, includes six Richardson bagging scales. A conveyor network takes the filled bags to Bemis automatic sewing machines and delivers them to the warehouse. Other facilities outside the plant handle bulk loading of trucks. In the photo on the right, feeds are being gathered at conveyor ends at the warehouse receiving station. Belts carry bags 175 feet from the several different locations. Feed goes out by truck from loading docks at the left and by rail cars loaded at the right. For the time being, finished bagged feeds are moved on hand trucks.

or for any other reason, the proper ingredients do not enter the mix, the machine will turn itself off until the correction is made.

Two Strong-Scott three-ton horizontal batch mixers and a small, independent premixer are employed in the mixing operations.

Further Processing

Determination of the form of feed is also made at the control panel. The operator pushes the button for pellets, for example, and all routing for this operation is accomplished mechanically. In former years, this may have required hand selection of spouts and valves at as many as eight or ten different places in the plant. The feed goes from the mixers to the top of the house, through a Hart-Carter aspirator and magnet, then to one of its final forms.

The pelleting operation includes three California Century pellet mills, each fed by a special high-speed mixing chamber. After pelleting, the feed goes into California coolers.

If the pellets are to be crumblized, they go to the cracking rolls, are re-elevated and put through a Rotex sifter for uniform size crumbles, with the "fines" going back to the pellet mills and "overs" to the crumble rolls.

The scratch feed system includes a corn cutter, steam and crimping roll and Merchen feeders.

Oats to be used in mixes are processed on a Morespeed Roller Mill machine that steams, crimps and cools. The material is then re-elevated, by a Sprout-Waldron "Pneuvac" air conveyor, into ingredient bins.

Animal fats may automatically be injected into any of the various mixes. The fats are mixed in a special Strong-Scott duplex mixer.

Molasses is mixed in feed and soft pellets made with Wenger mixing and pelleting equipment. After cooling, the products go to packaging units.

Packing, Handling

The arrangement for packing is such that, through the use of 16 surge hoppers, continuous supplies of several types of feed are available for handling simultaneously. If necessary, seven different types of feed could be handled at once, including bulk.

The packing floor, one of six working levels in the building, contains six Richardson bagging scales—a GB-38, four E-50's and a G-17. A conveyor network takes the filled bags to Bemis automatic sewing machines and delivers them to the warehouse. Belts carry bags 175 ft. from the several different locations to the warehouse.

For the time being, finished bagged feeds are moved on hand trucks rather than pallet and fork lift truck equipment. Such equipment may be added later.

A system of protective interlocking throughout the entire production process prevents a misfunction or mistake in one operation from affecting any other activity. If, for example, an ingredient became plugged in a bin, the whole system feeding that unit would automatically shut down until corrected, preventing pile-up or other complications.

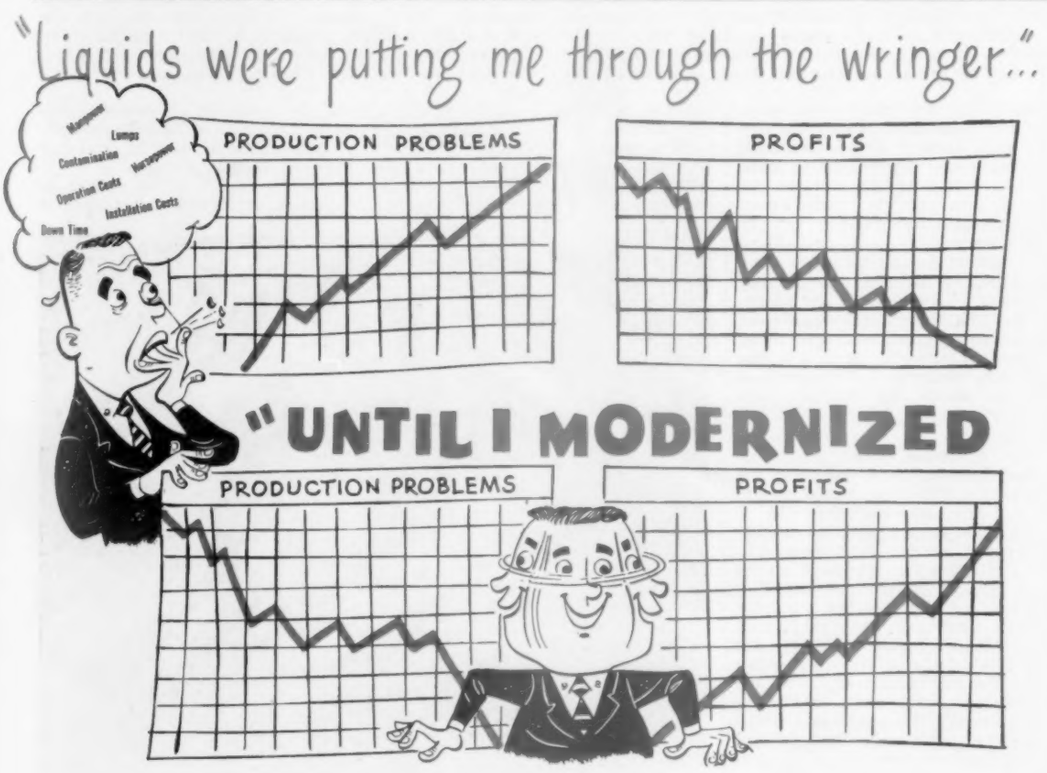
The latest developments in dust collection are cited as another feature of the plant. Two separate systems, designed and built by the plant contractor, will remove dust from the upper and lower portions of the plant.

Dr. John D. Shoeman

HEADS DIVISION — Dr. John D. Shoeman, Atlantic, Iowa, has joined the research department of the Walnut Grove Products Co., Inc., Atlantic, Iowa. He will head the veterinary research division. Dr. Shoeman, past president of the Iowa Veterinary Medical Assn., will conduct work on the relationship of animal disease control and proper livestock nutrition. Dr. Shoeman received his veterinary degree from Kansas State College in 1928, and has practiced in the Atlantic, Iowa, area for the past 15 years. He is a member of the Iowa Senate.

NEW FEED STORE

KILLDEER, N.D.—A feed and seed store is being established in Killdeer, N.D., by Joe Wetsch. The firm will be known as Wetsch Feed & Seed.



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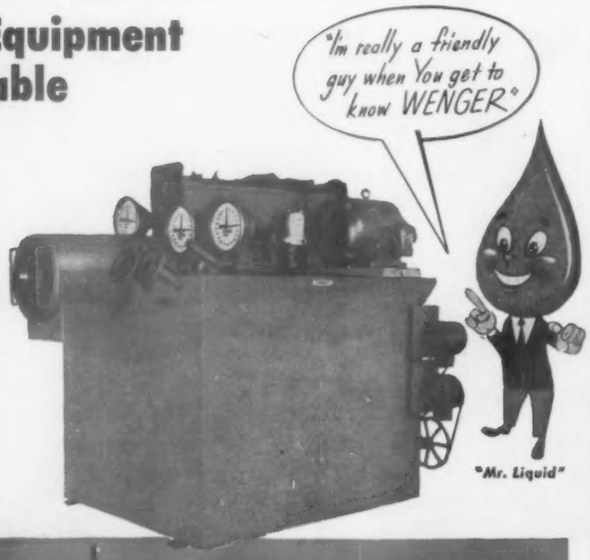

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Watch Changes in Farming, Advises Wyoming Dealer

By Jess Blair

A changing pattern of farming in the Little Bighorn Valley of Wyoming caused the firm of E. H. Walrath & Sons, Worland, Wyo., to change its merchandising policy.

At one time the Big Horn Valley was mostly an area of alfalfa and grain crops. Then beans were found to be suited to the short summers and long days of sunshine. The valley farmers started growing beans and the Walrath store personnel was quick to sense the impact of the new crop.

An electric bean sorting machine was installed, says Howard Walrath, manager of the firm. Since its installation in 1948, he credits the machine with building his feed and allied sales to bean farmers by 80%. In addition, the culled beans (cracked and small beans) are put to good use by using them as a protein supplement in pellets for sheep. The feed is proving popular with Wyoming sheep raisers, he says.

The firm has now become a source for bean seed, an average of 120,000 bags of beans—each weighing 100 lb. —being sold annually. This brings in considerable extra business, says Mr. Walrath, not only to the Worland location, but to all seven Walrath stores in Wyoming and Montana.

The winters are long and severe in the highlands of Wyoming and ranches are large, requiring large quantities of feed. To take care of the growing feed trade, the Walrath firm has installed the latest type of mixing and grinding equipment. Much of the feed processing is done automatically. The firm also has grain handling equipment.

"We have a peculiar problem here in this area," says Mr. Walrath. "We're a long way from anywhere. The farming is in the river valleys. There is also a lot of wasteland where cattle and sheep are thinly stocked. In order to build a profitable business, you've got to become equipped for the job, then reach out a long way in every direction to attract feed business," he says.

The Worland store believes in a good advertising program, even though it is well known by most farmers and ranchers for 100 miles around. Mr. Walrath sponsors a 15-minute radio program which features western music and works in plenty of facts about the business and what it is doing to serve farmers and ranchers. He also runs ads regularly in the newspapers.

The Walrath mills are all doing good business because they sized up the opportunities, then boldly set out to create a business of serving the needs of farmers and ranchers, the owners feel. They always figured that an expenditure in buildings and equipment was well spent if it brought in an extra volume of business.

The drouth has reduced stream flow in irrigated areas and caused a water shortage in several areas. Cattle and sheep numbers have been reduced. "In spite of this, our feed business has held its own," says Howard Walrath.

TRADE BUILDER—A bean sorting machine is credited with being a major business builder by the management of the E. H. Walrath & Sons Feed Mill, Worland, Wyo. The culled beans are used as a protein supplement in pellet feed for sheep.

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Sprout-Waldron to Hold Sales Meeting

MUNCY, PA. — Harold J. Alsted, vice president in charge of sales, has announced that a general sales meeting of all Sprout, Waldron & Co. district sales engineers, including those in Canada and Latin America, will be held Jan. 14-18, 1957, at the Lycoming Hotel, Williamsport, Pa.

The five-day session will be highlighted by the introduction and detailed discussion of the latest Sprout-Waldron products and services. Special emphasis will be given to the coverage of pneumatic handling, size classification, bulk truck, bulk storage and pelleting equipment.

The program will include addresses by H. M. Soars, president and general manager; Marshall Soars, vice president; Mr. Alsted and Frank Allen, general sales manager, as well as each of the divisional sales managers.

MRS. GEORGE MOFFETT DIES

NEW YORK — Mrs. George Moffett, 55, widow of the late George Monroe Moffett, chairman of the board of the Corn Products Refining Co., died recently at New York.

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Designers and Engineers for Mills, Elevators and Feed Mills
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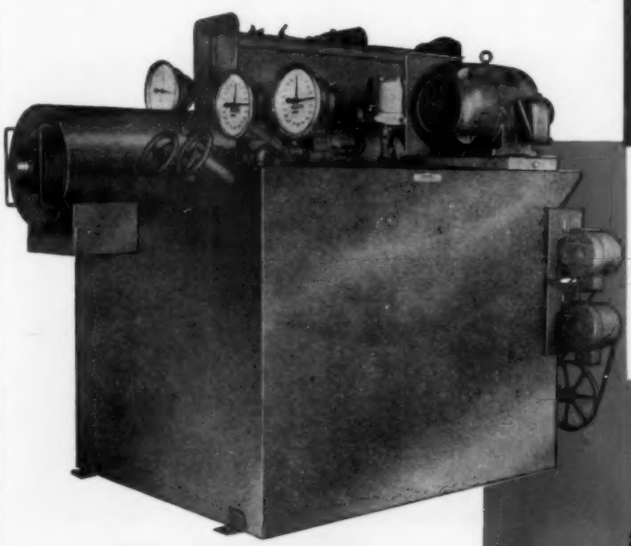
Wenger Introduces Its NEW Multi-Blender MIXERS



Applies up to 4 different Liquid Feed Ingredients simultaneously or individually or in any combination.

Model illustrated is 1275 Series Multi-Blender with capacities to 40-Tons per hour. Also available: 750 Series Multi-Blenders (capacities to 15-Tons) and 700 Series Multi-Blenders (capacities to 7-Tons per hour).

Mix Molasses, Animal Fats, Fish Solubles, Fermentation Solubles, Liquid Whey, Molasses-Urea Mixtures, etc.

In the 1275 Packaged Unit Multi-Blender, Wenger introduces a basic new feed milling unit—a mixer large enough to handle the capacity of even your largest mixing lines, and able to apply several liquids simultaneously or individually, in any percentage required by your formulas.

Every formula produced may be handled in this single packaged unit, with assurance of a perfectly homogenous mix of each liquid or combination of liquids in every particle of your feeds without balling or lumping—your assurance of a perfectly uniform mix of every liquid used.

Here is a complete packaged continuous liquid mixing unit with a 725-gallon tank which can be divided into 2, 3 or 4 compartments depending on your needs. Each compartment is equipped with Wenger Metered Flow Pump, built-in heating coils, automatic steam regulator valves and automatic liquid level controls. Feeder equipped with Variable Speed Motorized Drive. Model illustrated feeds from single hoppered bin. However, oversized feeder available which will feed premixed dry feeds from either of two overhead bins, hence eliminating changeover time losses with each formula change.

Another example of Wenger's creative engineering to meet the needs of the feed industry with a single unit which can handle all your liquid mixing requirements.

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for complete information, stating the types of feed, tonnage desired, liquid feed ingredients required and the maximum percentages of each liquid wanted.

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Modern Feed Mill Material Handling

Unloading, Warehousing and Loading Operations Still Represent the Largest Single Area for Improved Efficiencies in Feed Manufacturing Plants

By T. G. Burdsal
General Mills, Inc.

EDITOR'S NOTE: Material handling is said to represent the phase of feed plant operations where the greatest improvement in efficiency can still be made, and in this article T. G. Burdsal, feed plant superintendent for General Mills, Inc., at Belmond, Iowa, provides comments and suggestions on various aspects of the handling of ingredients and finished feeds. Mr. Burdsal discusses different types of bulk unloading systems, and he outlines various methods of handling finished feeds, both sacked and bulk. The article is based on his observations both in plants of his own company and in plants of other feed manufacturing organizations.

With labor costs constantly on the increase, management in our industry has found it of prime importance to seek means of increasing each man's productivity.

The blending and processing areas have been studied for labor-saving means for many years, and real progress has been made.

The material handling or unloading, warehousing and loading operations are still the largest single area for improved efficiencies. This is the place where manual strength is still the most important tool in the operation. Over half of the labor costs of manufacturing feed may be attributed to these departments.

Great strides have been made in the past several years in material handling improvements in old plants and in the building of new ones.

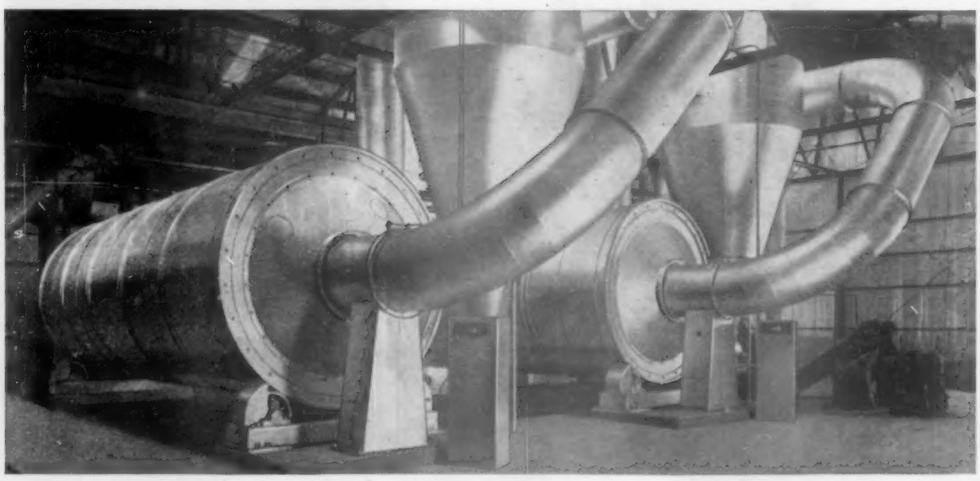
UNLOADING: Certainly the greatest change to improve efficiency in unloading and throughout the plant is the advent of bulk ingredients. It is not uncommon to have 98% of the ingredients in a full line feed mill received in bulk form. Such items as salt, phosphate, limestone and beet pulp, which some persons consider a problem, are now commonly handled in bulk form.

Pneumatic System: Perhaps the most versatile unloading system for mills up to 15 tons per hour capacity is a pneumatic type. Such systems may be used for every ingredient. They provide an efficient one-man operation that is dust-free and self-cleaning. For a mill rated at 15 tons per hour with no other unloading facilities, the pneumatic system should be one of the larger sizes. They may truly be called self-cleaning with the only contamination between ingredients being that in any bin top distributing conveyors.

There are some problems in pneumatic unloading which are disappointing if one is not aware of them. First of all, it is difficult to attain the design capacity on feedstuffs which the manufacturer claims. Whole grains and free-flowing material elevate with ease, but items such as bran, caked soybean meal, pulverized oats, meat scraps, limestone and similar ingredients do not readily flow into the handling nozzle. These ingredients depend on the brawn and to a great extent the skill of the operator in loosening the ingredients so they may flow into the suction hose. When the operator ceases digging and prying, the unloading stops. Because of this factor, one does not dare to design his unloading capacity equal to the proposed output of finished feeds. Capacity of these systems in many instances is less than half the potential rate because of poor flow characteristics of the ingredients.

Pneumatic conveying requires four times more power than a mechanical system for the same purpose. Maintenance costs are higher, too. If the system is operating 16 to 18 hours a day and five and six days a week, it would require new filter tubes every two months. In addition, a section of new expensive flexible metal unloading hose wears out at least every two months. Other special mechanical parts and preventive maintenance labor add to the over-all expense.

Power Shovels: The most popular system is a conventional power shovel operated by two men. One man can be used, but efficiencies are lowered. Power shovels are the fastest



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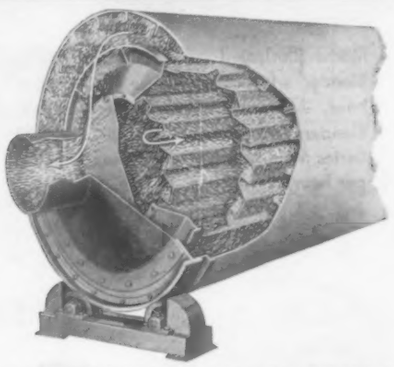

Alfalfa or other products to be dried are drawn through the dehydrator on a stream of hot air . . . advancing from the inner drum, through the intermediate drum, and out through the outer drum—three drying stages ideally suited to the changing, evaporating rates characteristic of your product. Flights assure constant "showering action" for uniform drying. (The photograph at top shows one way in which dryer fan may be by-passed if desired).

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The use of lift trucks to handle bagged feeds has increased in recent years, and it is predicted that in the future, lift truck operations will be extended to more plants to permit the versatility and efficiency offered in this system.

practical means of unloading and are surpassed only by costly car dumpers. Most feed mills would not be able to justify such larger equipment unless their capacity was over 1,000 tons per day or was in conjunction with a terminal elevator.

Power shovels are rapid on grains and usually have surplus capacity to unload cars quickly enough to prevent any large backlog from developing in the yards. Such a system in even a smaller mill would have an average capacity of 25 tons per hour. This is as much as double the average capacity of a 100 H.P. pneumatic system. Power shovels and mechanical conveying use a minimum of power and a minimum of maintenance.

Power shovels are not suitable for salt, limestone, phosphate or beet pulp in bulk. These ingredients must then be received in hopper cars or handled in sacks either directly to a warehouse floor or cut into bulk at the car door. Certain other ingredients such as alfalfa meal are very dusty. This presents a problem when men must work in the car as they do with the shovel. Some alfalfa meals may be purchased with oil added or in granule form to make them less dusty. Power shovels should not be operated on a track scale so weighing must be accomplished through hopper scales or by moving cars over a scale at some other location.

Front Loaders: Some concerns are successfully using tractor-driven front loader scoops to unload bulk cars. This is a one-man operation whereby the car is unloaded one scoop at a time into a mechanical conveying system to holding bins. Productivity for such a method is equal to a power shovel system. Maintenance on the truck is no more than on a conventional lift truck. The system is versatile and can handle all ingredients. The method is somewhat dusty, but with a dust collection system the problem may be localized. One plant does its unloading alongside a three-walled room which opens into the box car on the open side. The room is kept in negative pressure by a dust system. By arranging temporary curtains between the room and car, the negative pressure keeps the dust contained within this area.

In the future we will see more extensive use of hopper and air-slide cars. On free-flowing ingredients the operation may run by itself with only periodic checking by a man from the truck dump or from inside the mill. Other ingredients will be made free-flowing by air-slide bottoms or car vibrators. The trend is overwhelmingly toward bulk in even the smaller plants. Further efficiencies in this area will come slowly, as we are down to a one-man operation in many instances at the present time.

Finished Feed Handling: Th greatest area to improve efficiencies in the plant is in the warehouse and its related material handling systems.

The best performance could be obtained in conveying finished feeds from packer directly to car or truck. By so doing, the only manpower necessary would be exerted in loading from belt to carrier. Unfortunately, the number of items has become far too numerous in recent years to permit such a simple arrangement. As a result, the warehouse has become a cushion to permit longer, more efficient runs on the mill.

Most mills find themselves at a point where loading direct is impractical. This stems from the larger amount of truck business which all plants are realizing. Cars may be set and loaded in a planned order; however, trucks may come to the plant at any time and they may rightfully expect their order to be ready for loading. This means that sufficient warehouse space must be provided not only as a cushion for the mill production, but also to supply sufficient variety on the floor to handle unexpected customers.

Some mills encourage collect telephone calls to the mill so that they may have a basis on which to plan their operating schedule. This also assures the customer that feed has been reserved for him and substitute items will never be necessary. It is believed that collect phone calls are the cheapest warehouse one could build. Several other plants have taken this step a little further by actually giving exact appointments for picking up feeds. This would be a pleasant goal in handling trucks but could lead to some dissatisfaction among dealers. They will always point out the mills which do not have such strict policies and thereby insist on special loading concessions.

This background gives some idea of the problems encountered in handling of car and truck orders. For this reason, the warehousing and loading operation becomes a key in efficient mill operation and in providing the facilities to make for prompt loading and good dealer relations.

Thus warehousing is a necessity for which there have been several ways developed to handle it efficiently.

Belt Conveyors: Some system of belt conveyors is used in most mills. The most elaborate types consist of belts and chutes to each car-loading spot and perhaps direct to several truck-loading stations. Any feeds to be warehoused would then be deflected to hand truck or lift truck storage areas. Conveyors provide the most efficient means of direct loading from packer, but extensive item

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KEMITRACIN is employed at the same gram level as any other quality antibiotic, but remains longer in the intestinal tract. This extra "staying power," we believe, makes possible the maximum antibiotic effectiveness in obtaining optimum growth and therapeutic benefits. KEMITRACIN mixes thoroughly and uniformly—is priced right. Send for complete scientific data. There's no obligation, of course.

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varieties cut badly into these efficiencies. For a mill to operate most efficiently it must make as long a feed run as possible and must warehouse slower moving items.

Some larger mills still find it possible to load as much as two-thirds of their production on a direct basis. This is unusual, however, and to do this well means that most of the output is handled by rail transportation.

The problem then resolves itself to handling in the warehouse and from warehouse to car or truck. Both hand trucks and fork lift trucks are used for this purpose.

Hand Trucking vs. Lift Trucks: Hand trucks are fast losing favor among millers because of their small load capacity, great amount of manpower expended and inefficient use of warehouse space. A lift truck, on the other hand, may transport five times the load at three times the speed. In addition, lift trucks can provide two-thirds greater warehousing in the same floor area and do the entire job with one fifth the manpower required for hand trucks. In modern feed mill handling, hand trucks should be considered only as a tool in moving small crates or a few sacks of ingredients. No longer do they lend themselves to a truly competitive and efficient plant.

Most feed millers agree that lift trucks are here to stay. They are the best answer yet to movement and storage in multiple item feed mills. A combination of direct loading conveyors and palletized warehousing makes for the most efficient plan. In a new plant it is difficult to justify such a combination, but in some older plants where conveyors already exist, a hybrid system may be developed at minimum cost. For the most part, lift trucks and palletized warehousing offer the most efficient and versatile system. It is a combination of conveyor, storage device and loader all in one.

To develop a good warehousing arrangement, one must prepare an exact plan of floor layout. In addition to palletized finished products, areas must be allotted to ingredients, empty sacks, empty pallet storage and adequate aisles. The best place to start in planning is from the packages themselves. Since most plants handle 100's and 50's, the ultimate goal would be to use one pallet size for both packages. Skimping on pallet size is poor economy because this will result in excessive package damage and unstable loads.

One system for handling bulk finished feeds involves the use of portable bulk bins which are moved by fork lift trucks. In the picture above, a bin of this type is being loaded with feed. Details on the system used at the author's plant appeared in the Nov. 17 issue of Feedstuffs, and a system used at another plant was described in the May 26 issue of Feedstuffs.

Most plants use a 15 x 3½-in. paper bag varying from 33 to 37 in. long. This package is ideally suited to palletizing as it is twice as long as it is wide and permits varying patterns and a good interlocking load. Everyone seems to have his own pet pallet sizes which suit the needs of a particular plant. The 50-lb. paper usually determines the pallet dimensions, as more varieties are sold in this size. Usually 100's can be made to fit any pallet specifically designed for 50's. It is truly worth the attempt as several sizes of pallets are undesirable. Two sizes are worthy of mention. The first is a square 48" x 48" in size which may be adapted to a "take it or leave it" use. On this pallet, bags are stacked in a chimney stack pattern, four to a tier, 10 high. The other is 60" wide by 44" deep. Bags are stacked six to a tier and seven or eight high, and interlock for a stable load.

The square design works well where the "take it or leave it" pallet principle is used. In this type, a special lift truck with five forks may pick up the pallet and load, or pick up the load alone without the pallet. The load may be supported on the forks and with the aid of a hydraulic pusher on the truck the load may be forced off the forks and into a designated spot in car or van. Manual lifting is thereby eliminated and personnel in the car is not necessary. Such a system can at least double efficiency over manual handling from pallet to car or truck.

The "take it or leave it" principle

(Continued on page 83)

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Bīfuran, a specific combination of nitrofurans, already has soundly proved its effectiveness in coccidiosis control. And it has demonstrated unmatched benefits by improving feed conversion — maintaining broiler growth while fighting off secondary infections.

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Cordially,

Frank N. Getman

Frank N. Getman
President

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Broiler growers are in the market for feeds with a coccidiostat that does more than control coccidiosis. To maintain profitable production they need the better feed conversion qualities and other bonus benefits that bīfuran adds to your feed. That's why, regardless of the coccidiostat you're now using, it will pay to switch to bīfuran, the coccidiostat that turns problems into profits. New bīfuran is ready now. Ask your Hess & Clark representative for full details.

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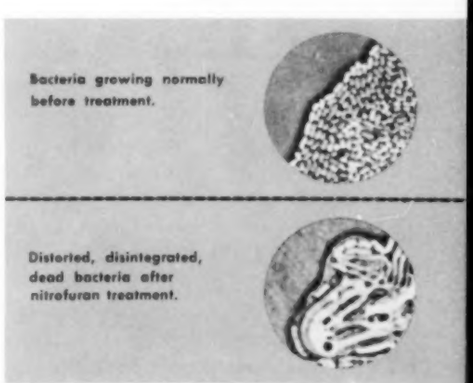
New bīfuran is more than an efficient answer to coccidiosis problems. It's a modern coccidiostat with unmatched bonus benefits. Besides controlling coccidiosis and permitting solid immunity, bīfuran significantly improves feed conversion,[1-2] stimulates growth in the presence of coccidiosis[3] and attacks many secondary infections.[4] That's why bīfuran helps broilers make better use of every ounce of feed. Feeding records speak for themselves — show that birds fed bīfuran-fortified broiler rations need less feed to make the weight. That's why new bīfuran is best for broiler growers . . . and best for feed manufacturers. Bīfuran is today's answer to improved broiler feed performance.

Better feed conversion—Recent field research with bīfuran demonstrated feed savings of up to 4¢ per bird over another widely used coccidiostat . . . up to ½ pound less feed needed to grow a 3-pound bird.[3]

Effective coccidiosis control — Bīfuran gives greater protection against both cecal and intestinal coccidiosis because of the synergistic action of its own nitrofuran components.[2-5-6] Allows development of solid immunity.



Fights secondary infections—Bīfuran attacks vitality sapping secondary infections which often go undetected to lower feed performance. These actual microscopic photographs demonstrate the action of nitrofuran drugs against common disease bacteria.

Turn the page for more research and performance information

bifuran

No other coccidiostat can match bīfuran's performance in broiler feeds

Bīfuran goes to work where it helps the most. Controls coccidiosis. Improves feed conversion. Increases profit per bird. For instance, when 1,800 White Rock chicks were exposed to natural coccidiosis infections, the birds fed bīfuran-fortified feed required .33 pound less feed per pound of gain than birds given another widely used coccidiostat.[3]

The birds receiving bīfuran in this test returned 4.26¢ more per bird than birds given the other coccidiostat.

These results are confirmed by other widely conducted tests.[1] In every case birds receiving bīfuran cost less to raise than the birds receiving the other coccidiostat. These tests show that broiler growers can expect savings of 2¢ to 3¢ per bird by using bīfuran-fortified feeds.

bīfuran maintains growth

From day-old to market, bīfuran helps keep birds gaining at their expected rate. Even during times of stress no lag in gain is likely. This means growers can more accurately hit market dates and deliver top quality birds.

Wide margin of safety

There's no risk involved with bīfuran in your feeds even at twice the recommended level. It's non-toxic. And it's safe even if accidentally given to breeding or laying flocks. There are no adverse effects on egg quality, fertility, hatchability or rate of lay. This is another important reason why bīfuran is the ideal coccidiostat both for feedmen and growers.

On the handling end — bīfuran frees you from the worry of contamination problems. It's safe in the mill —in feed rooms. Accidental drug hangups are no problem — new bīfuran is also safe for breeding and hatching flocks — no risk involved when using the same equipment to mix broiler and layer or breeder feeds.

Leaves no residue in body tissue

Bīfuran can be fed right up to market time without danger of drug residues left in body tissue. It's used up as it works. There's no dangerous leftover.

bīfuran advantages spell more profit

Add up all the bonus benefits of bīfuran and the total is more profit for broiler growers and better feed merchandising for you. Bīfuran frees you from the worry that your coccidiostat may upset feed conversion or cause other harmful side effects. Include bīfuran in your broiler feeds now and take advantage of this new combination of lifesaving nitrofurans.

It pays off in better feed sales and more grower satisfaction with your feeds. Your Hess & Clark representative has complete details or contact Feed Products Division.

Here's how you register bīfuran;

No new drug application or certification is required to add bīfuran to your feeds. Bīfuran appears on the tag as a combination of furazolidone and nitrofurazone. All you need do is list the active drug levels of each to comply with local state regulations. Bīfuran is compatible with all commonly used feed medications and can be used in combination with regular levels of arsenicals, antibiotics, etc.

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Harold W. Grassl Named President of Feed Institute, Inc.

Harold W. Grassl

DES MOINES, IOWA—During a meeting of the directors of Feed Institute, Inc., Nov. 18, at Hotel Fort Des Moines, Des Moines, Iowa, Harold W. Grassl, sales manager for the Tanvilac Company, Inc., Des Moines, was named president. He succeeds Frank T. Lee, C. L. Lee & Sons, Ida Grove, Iowa.

Fred Anderson, Northwestern Distributing Co., Mason City, Iowa, was elected vice president. Al Guggedahl, who has been managing director for the past four years, was reelected.

Directors named are: C. M. Bodensteiner, Fort Dodge (Iowa) By-Products, Inc.; Hugh Gordon, Gordon Hatchery, Marion, Iowa; Columbus F. Hayes, A. D. Hayes Co., Mt. Pleasant, Iowa; D. W. Hunter, Pillsbury Mills, Inc., Clinton, Iowa; Herman Jensen, Golden Sun Milling Co., Estherville, Iowa; Wayne R. Johnson, Johnson Bros. Mill, Shenandoah, Iowa; Vern Lundin, Hubbard Milling Co., Mankato, Minn.; James L. Roach, J. Roach Sons, Inc., Plainfield, Iowa, and Mr. Lee.

USDA Issues New Poultry Pamphlet

WASHINGTON — "USDA Poultry Inspection—a Consumer's Safeguard" is the title of a new 6-page pamphlet issued by the U.S. Department of Agriculture.

The publication, prepared by the Agricultural Marketing Service, provides basic information on poultry inspection. It contains illustrations of the "Inspected for Wholesomeness" mark and the combined inspection and grade label. Two pages of text explain these insignia, outlining "Why They Are Important" and "Where to Find Them."

A copy of the publication is available from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

Moves Imminent For Louisville Firms

LOUISVILLE—Some feed firms in the Baxter Ave. and Chestnut St. area of East St. Louis, may have to find new locations, as a result of the city's decision to cut a new street and a bridge across Beargrass Creek, for an eastern outlet for improved traffic facilities.

Condemnation proceedings are underway and bids for demolition of some existing buildings in the area, which is the wholesale feed center of Louisville, have been let.

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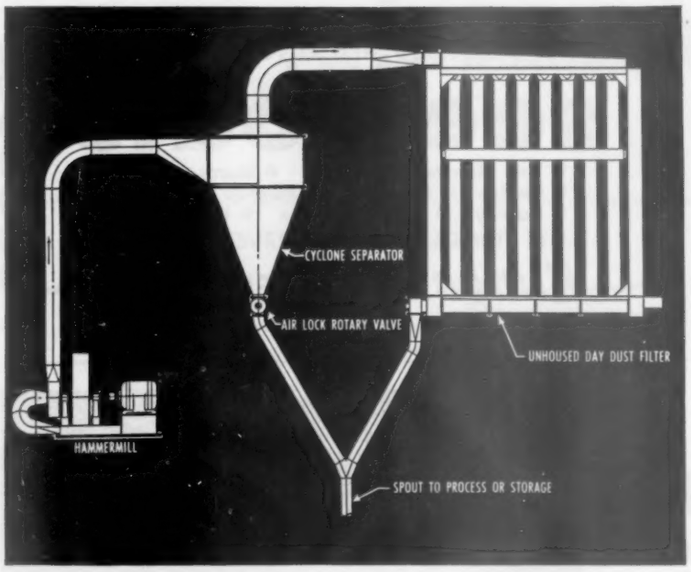

Diagram above shows hammermill installation with DAY dust filter receiving exhaust air from cyclone. Plant after plant report "fines" captured (and returned to process or bins) by their DAY filter reduce invisible feed loss by as much as 85%. This product saving will help pay for a DAY filter in a short time and produce extra profits.

Cutaway view of DAY "AC" Dust Filter. Licensed by H. J. Hersey, Jr.

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For further information request Bulletin 559

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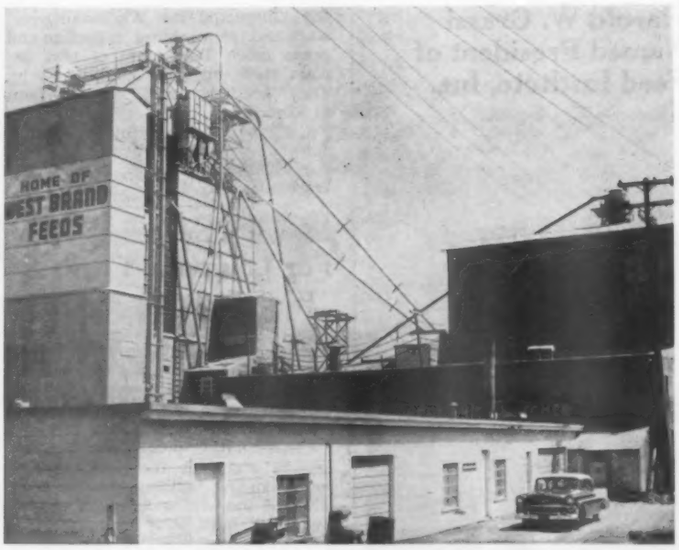


Modern Feed Plant at West, Texas

Texas Firm Triples Production With New Push-Button Plant

Many feed mills have been confronted with rising labor and manufacturing costs and limited production. To meet such a situation, it becomes obvious, mill modernization is necessary.

An example of what can be done to improve efficiency and increase production at the same time may be found in the case of a central Texas feed plant.

A year ago Emil W. Plasek, owner and operator of the West Flour Mill at West, Texas, near Waco, was facing the problems of increasing costs and limited capacity in his feed mill operations. Today, he is operating a new push-button mill, and he points out, he has tripled his production without increasing basic labor costs.

With his plant located in the heart of heavy broiler and turkey production, Mr. Plasek found that demand for his feeds was increasing year by year. He also operates a large hatchery in conjunction with his feed mill.

Back in 1920, Mr. Plasek operated the West Flour Mill and was one of the pioneers in his area in formula feeds. He added gradually to his small plant, but by 1955, he was unable to keep up with demands of his growing organization of dealers, which covers a 100-county area of central Texas.

Modernization Needed

Mr. Plasek decided he would have to start from scratch and undertake a program of complete modernization, with advanced engineering and modern equipment.

Hayes & Stolz, Fort Worth firm which designs and engineers feed plants and manufactures equipment, handled the comprehensive project.

While reducing labor costs, emphasis was put on an over-all increase in tonnage and versatility of operation.

The method of handling incoming ingredients was changed from sacks to a new bulk method, using a Sprout-Waldron pneumatic unloading system which moves materials to 23 overhead storage bins. To assure fast and accurate bin loading, a new Hayes & Stolz electric distributor was included, with an electronic control panel controlling 20 outlets.

A Fairbanks-Morse hopper scale with Print-o-matic was installed to assemble the formulas. Then the assembled formulas were put through a Richmond Gyro-Whip feed dresser, to a pair of H&S 3000-lb. horizontal batch mixers.

New conveying and elevating equipment, designed and built in the Fort Worth plant of the mill engineers, was installed.

For the addition of liquids to poultry feeds, an H&S liquids mixer was included in the new facilities. For pelleting poultry and range feeds, two California pellet mills were installed—one a 100 h.p. mill and one a 75 h.p. mill—along with a California cooler, crumbler and shaker. From these machines, the pellets move into ten 20-ton sacking bins or directly to bulk delivery trucks. Mr. Plasek uses two bulk trucks, one a Baughman and one a Goldsberry.

The bagging equipment provides for handling of 12 to 14 50-lb. sacks per minute. Included in the equipment are a Richardson GA 38-multipurpose scale, a St. Regis settler, a Richardson sewing conveyor and Bemis sewing pedestal with a Union Special 80600E sewing head and Bemis automatic actuator and thread cutter.

Mr. Plasek readily notes that his newly engineered mill has tripled his production.

"We are now operating around the clock with production of 300 tons a day," he said, "and we did not increase our basic labor costs."

Dealers' Bookkeeping School Scheduled

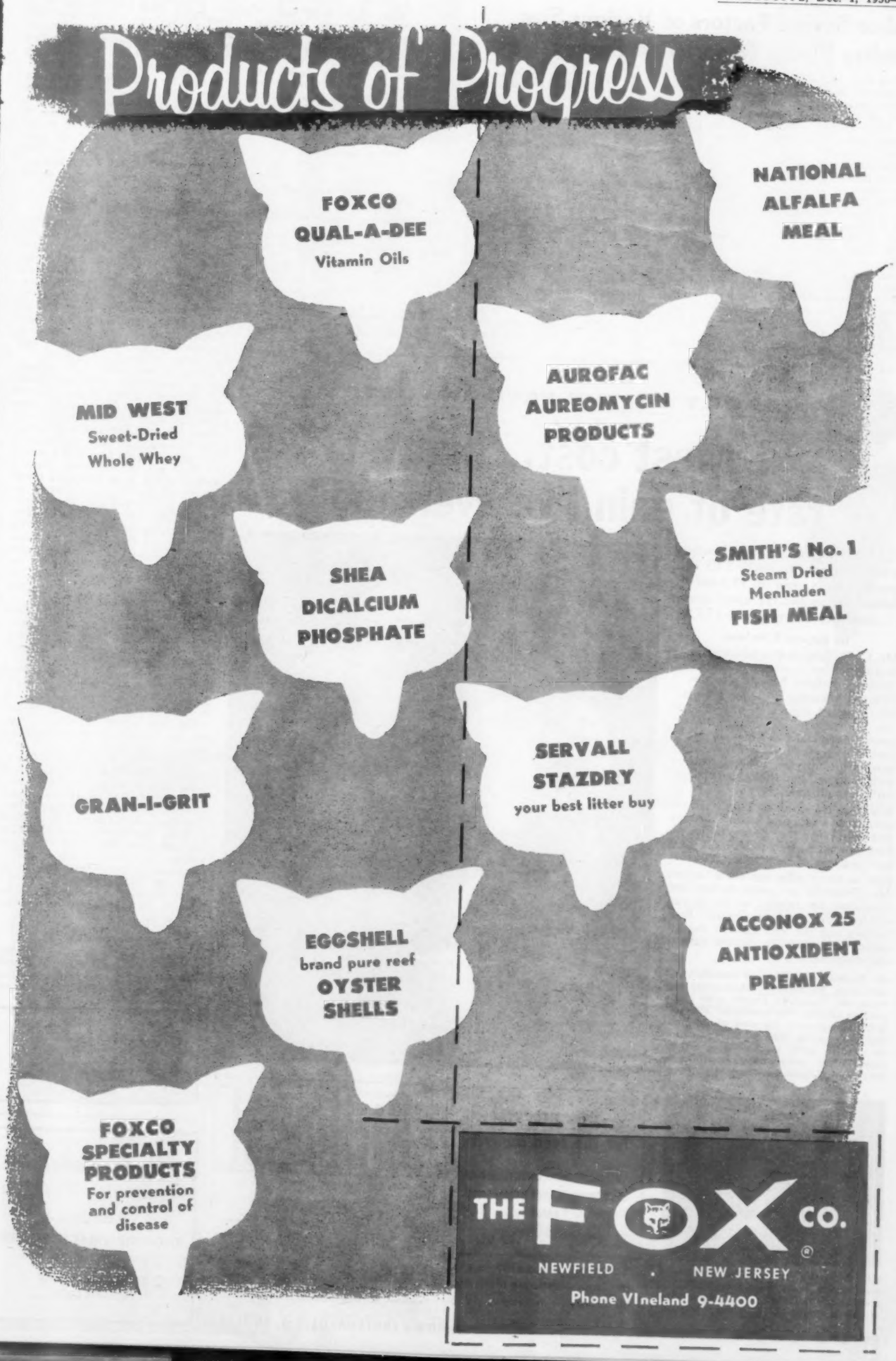
URBANA, ILL. — A special bookkeeping school for grain and feed dealers will be held at the University of Illinois Dec. 10-14, according to L. F. Stice, extension marketing specialist at the College of Agriculture.

Bookkeepers for country elevators and local grain and feed companies will find the five-day course helpful in their work, but many dealers and company managers may also find it helpful in using their books as a management tool, the university said.

This school is sponsored by the Illinois Country Grain & Feed Institute, USDA Farmer Cooperative Service, St. Louis Bank for Cooperatives, and University of Illinois College of Agriculture.

Broiler Circular

CORVALLIS, ORE.—Growth rates and feed requirements of different breeds and strains of broilers are reported in a new circular published by the Oregon State College Experiment Station. The new circular, entitled "Broilers: Their Growth and Feed Requirements," includes information on rate of growth, feed use and death losses, as well as comparisons of broiler stocks. The circular is based on studies with more than 3,000 chicks at the Oregon station. The chicks were fed a practical ration and received average care.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Labor Saving Factors of Various Size Poultry Flocks Reported in Survey

ST. PAUL, MINN.—A poultry flock of 1,000 or more hens can, through proper use of labor saving equipment, be handled as part of a general farm business, according to Cora Cooke, poultry husbandry department, University of Minnesota, in commenting on findings of a recent survey involving 41 Minnesota poultry flocks.

Miss Cooke states that the number of Minnesota farms having chickens is decreasing and the size of the flock increasing. In 1950 chickens were raised on 76% of Minnesota farms; in 1955 the figure was 73%. Flock size was up from 168 hens per farm in 1950 to 227 in 1955.

It has generally been taken for granted that the operation of a flock of commercial size must necessarily require much more of the farm operator's time than is the case with average size farm flocks handled by family labor. The results of the survey, Miss Cooke explains, indicate that probably the opposite is true in most cases; that is, family labor is used to greater advantage in the larger flock, and that the demands on the farm operator's time can be largely limited to seasonal chores which can be fitted into the year's work when most convenient.

The questions asked in the survey included a listing of labor saving practices and equipment being used, a rating of the practices and equipment in importance as labor savers, and an estimate of the time required for the various daily and seasonal chores. The flocks varied in size from 420 to 10,000 hens and averaged 2,152 hens.

The reported daily chore time in caring for the laying flock was 122 min. per 1,000 hens. To estimate the peak load that might be anticipated in any one period, the additional chores during the brooding period were added, to make a total peak load of 165 min. daily per 1,000 hens. In addition to this, the flocks surveyed showed another 37 hours per 1,000 hens per year for such seasonal chores as cleaning out and replacing litter, housing the pullets, culling and vaccination.

Efficient Labor Use

That labor per hen can be materially reduced when the size of the flock is increased sufficiently is shown in this table:

Labor Requirements Per Layer for Different Size Flocks

Average size of flock	Labor requirements per layer per year
49 layers*	2.5 hours
225 layers*	1.9 hours
408 layers**	1.5 hours
2,100 layers***	.86 hour

*USDA Statistical Bulletin 161, Labor Use for Livestock.
**Detailed Cost Study of Agriculture Economics Department, University of Minnesota, 1951-53.
***Minnesota survey reported in this article.

It is safe to assume that production in the larger flock would be at least as high as average and feed costs no higher. Also it seems safe to assume that the price received for eggs would be at least as high as in the average farm flock. Assuming that the only advantage of the larger flock is the more efficient use of labor, as compared with a group of southern Minnesota farmers in a detailed cost study for the period 1951-55, on this basis of .86 hour as compared with 1.9 hours per hen per year in the detailed cost study—the return per hour of labor would have been 48¢.

Gains in Larger Flocks

However, observation indicates clearly that there are two definite gains in the larger flocks, a higher rate of production and a higher price for market eggs. Larger flock owners can afford to install cooling equipment which might not prove economical for smaller flocks. They can afford to gather and market eggs more frequently. Moreover, premium egg buyers offer good incentives, if only to reduce their collection costs.

Farm Management Assn. records showed production on 200-hen flocks of 198 eggs per hen. It was assumed that these larger flocks would average 220 eggs. On this basis of 22 more eggs per hen and only 1¢ per dozen premium on eggs, the flocks in this survey would have had a return of $1.43 per hour of labor. Such a return would have compared favorably with the livestock returns reported in the five-year cost study: 21¢ per hour for farm flocks averaging 200 hens, $1.01 for dairy, 71¢ for feeder cattle and $1.51 for hogs.

Buying of feed at a more favorable price can probably be considered another advantage in larger flocks, but no attempt has been made to place a value on this point.

The survey did not include any data on egg production nor on costs and income. The cooperators estimated the cost of housing and equipment at $5.92 per bird.

Housing costs showed only slight differences between larger and smaller flocks, with a slight advantage on the side of the smaller flocks. What seems likely is that comparable housing can be built more cheaply, per bird, for the larger flock, and that the inadequate housing available to many smaller flocks is an important factor in the lower rate of production. One housing advantage not always taken into consideration is that less floor space per bird is required in large flocks. The nine flocks of less than 1,000 birds had a floor allowance of 2.9 sq. ft. per bird. The remaining 29 flocks with an average flock size of 2,550 have had only 2.1 sq. ft. per bird. In other words, the capacity of a given space was increased by about 35%.

Chore Time

The 122 min. daily per 1,000 hens devoted to care of the laying flock was divided up as follows: Feeding 22 min., watering 3.5 min., gather-

Lilly

REPORT TO THE FEED INDUSTRY

"Lowest cost...highest rate of gain I've ever had"

C. W. Frederick uses supplements with 'Stilbosol' to make 3.05 lbs. average daily gain on 53 head of mixed Angus and Hereford steers . . . cost per lb. of gain—17.75¢

by Eugene S. Hahnel

Mr. C. W. Frederick of Marion, Ohio, is another enthusiastic booster for 'Stilbosol'-fortified beef supplements.

"I've been feeding cattle for 5 years," Mr. Frederick reports. "I'm convinced this is definitely the lowest cost per pound of gain and the highest rate of gain I've ever had. I'm feeding out 47 head again this year, using supplement with 'Stilbosol,' and I'm tickled to death with their progress."

While his cattle are on pasture, Frederick feeds a ration of ground ear corn and oats. When they go into drylot, he feeds ground corn and cob meal, oats, hay and supplement with 'Stilbosol.'

Like so many other successful feeders, Mr. Frederick has come to like and appreciate the helpful service he can get from his feed manufacturer. Both farmers and the feed industry benefit greatly through such mutual respect and cooperation.

Mr. Frederick and his feed manufacturer's serviceman, Bill Dietsch (left), examine and discuss Mr. Frederick's present grain ration which he balances with commercial 'Stilbosol'-fortified supplement. This story of Mr. Frederick's success with 'Stilbosol' in his ration will be read by cattle feeders throughout the country in Lilly advertisements appearing in fifteen farm magazines.

Frederick's steers were Angus-Hereford crosses, some western, others native. They gained 3.05 pounds per day for 167 days. Cost per pound of gain averaged 17¾¢ by using 'Stilbosol.'

Lilly products for the feed industry

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VITAMIN B_{12}
'STILBOSOL'

'Stilbosol' is sold only to the feed manufacturing industry.

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Stilbosol

(Diethylstilbestrol Premix, Lilly)

Lilly

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2751303.

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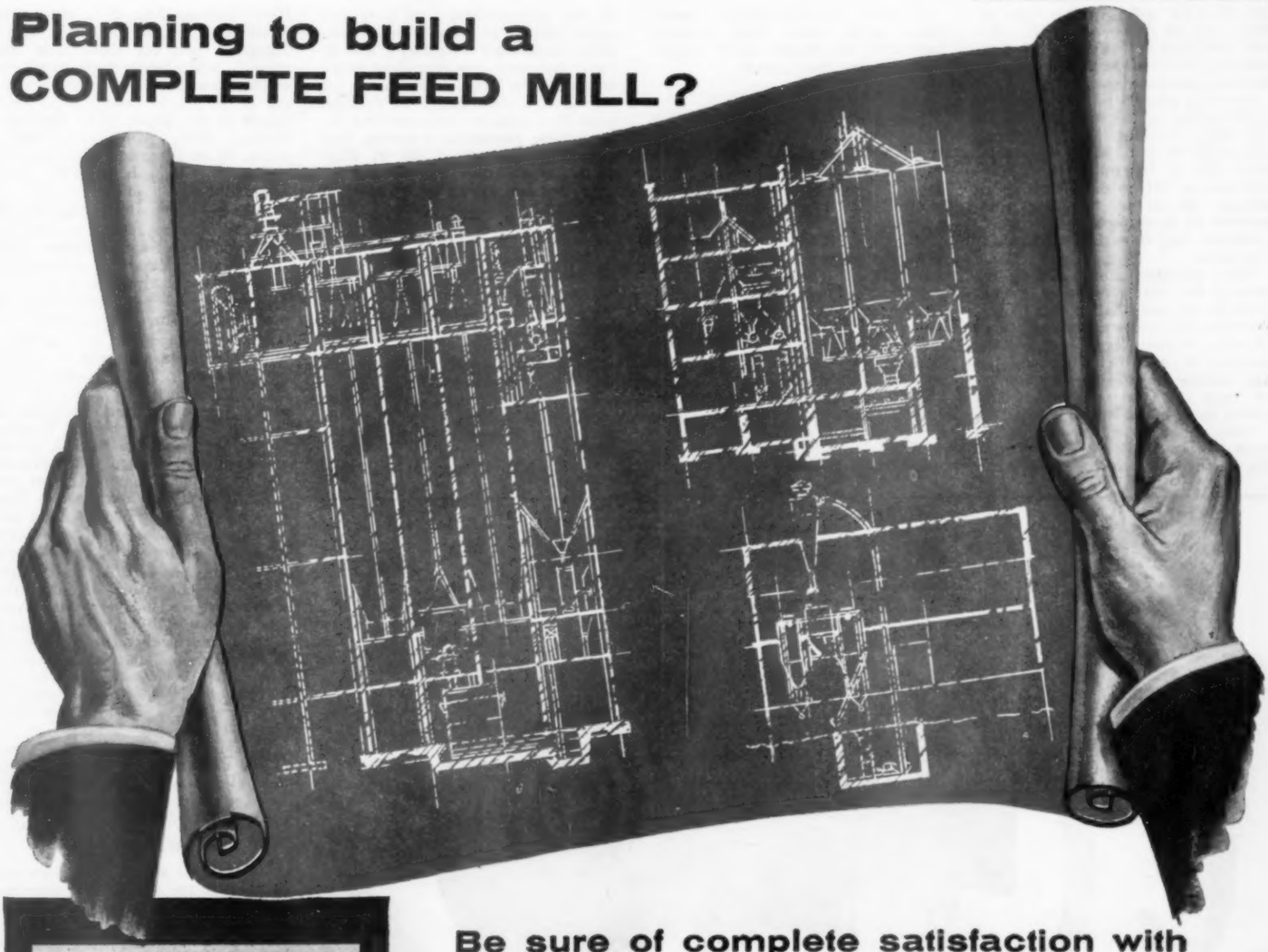
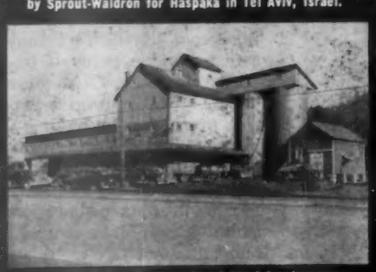
Planning to build a COMPLETE FEED MILL?



A mill designed and equipped by Sprout-Waldron for Wampler Feed & Seed Co., Harrisonburg, Va. Note Permaglas Storage Structures at right.

This mill was designed and equipped throughout by Sprout-Waldron for Haspaka in Tel Aviv, Israel.



Typical of the thousands of feed businesses throughout the world which Sprout-Waldron engineering and equipment have helped grow from single mixer installations is this Central Pennsylvania mill. It offers a complete service to the farmers in this area.

Be sure of complete satisfaction with Sprout-Waldron's Big 4 Plus

You'll get the **one best** answer to your problem of building a complete feed mill to meet your special requirements at Sprout-Waldron. **Only** Sprout-Waldron offers the **BIG PLUS** factors necessary to give you the **ideal** mill in a complete package . . . at the lowest possible first cost and with the most money-saving advantages.

You get the benefits of Sprout-Waldron's 90 years of experience in solving feed mill problems . . .

PLUS the industry's finest staff of creative engineers, millwrights, servicemen, and salesmen . . .

PLUS the widest possible selection of machinery from America's largest, most complete lines of grain processing equipment—all adaptable to your individual needs . . .

PLUS familiarity with milling methods throughout the world and milling machinery as used everywhere . . .

PLUS a research laboratory that continually develops new improvements and applies them to current problems . . .

PLUS current experience in designing and building complete feed mills throughout the world.

Whatever your needs—a small mill, a large commercial operation, a mill that incorporates equipment for bulk storage, bulk delivery, continuous mixing, or batch mixing with or without push-button controls— Sprout-Waldron's **BIG PLUS** advantages can save you time, trouble, and money.

Write today for portfolio of drawings and case histories of recent mills that we have designed and built.

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E-1/424

ing, cleaning and packing eggs 83 min., care of litter and nests 13.5 min. Note that 68% of the total chore time was devoted to gathering, cleaning and packing eggs.

An above average work load can be expected during the time that chicks are being brooded. In the survey, this added 43 min. daily, for a total peak load of 165 min. daily inc'uding care of the laying flock. Of this amount, 26 min. per 1,000 hens were allotted to chick feeding, 11 min. to watering and 6 min. to caring for the house.

With handling of eggs taking the bulk of the daily chore time, it is of interest to note that the time was distributed as follows: Gathering eggs 31 min., cleaning eggs 30 min., and packing 22 min. It is obvious that any success in reducing the number of eggs that have to be cleaned would be of major importance.

Does the labor efficiency increase with the size of flock? According to the survey, it does.

A 4,000 hen flock would require about seven hours daily, whereas four 1,000 hen flocks would require nearly twice that amount.

Methods of Operation

How much of the difference can be accounted for by different methods of operation? How important, for example, are mechanical feeders? How do cage plants compare with conventional housing in labor required? These comparisons follow:

A total of 92.6 min. daily per 1,000 hens was required in the 13 flocks (average 3,447 hens) using mechanical feeders. Four flocks (average 1,657 hens) using cage housing required 144 min. daily per 1,000 hens. Twenty-four flocks (average 1,870 hens) using conventional feeders needed 152 min. daily per 1,000 hens.

While the number of flocks under cage management was considered too small to be a good basis for comparison, it might be noted that here again the advantage is on the side of the larger flocks and that the caged flocks and those with conventional hand-filled feeders are of about the same size and show small differences in labor requirements.

Producers were asked to indicate what they consider their greatest labor saver. Automatic watering was placed first by 26 of the 41 flock owners, and it was listed among the important labor savers by a total of 35. Built-up litter was listed in 16 cases. A few other practices that received a "first" rating were community nests, droppings pits, feed stored in the house, automatic feeders, elevator and confinement rearing. Only three of the 13 who have automatic feeders rated them first, but a total of nine considered them important. One producer felt the cost was not justified in his case.

Following is the listing of most-used practices as a per cent of the possible cases where they might be used.

Year round confinement of layers, 100%; built-up litter, 97%; automatic watering in the laying house, 92%; droppings pits (of those who use roosts), 90%; nests other than individual nests, 86%; automatic watering of chicks on range, 86%; feed stored in the house, 83%; fan ventilation, 83%; permanent brooder house, 63%; automatic watering for chicks in brooder house, 63%; confinement rearing, 44%.

The choice of nests among the 37 growers who do not keep hens in cages was as follows: individual nests 16, roll-away nests 14, community nests 13, and laying rooms 5.

In some houses different types of nests are used in different pens.

Certain equipment and practices may increase in importance as the size of flock increases, Miss Cooke states. Mechanical feeders, for example, probably increase in value as the size of flock increases because of the low cost of additional trough space, once the original investment has been made. Laying rooms appear to noticeably reduce the time required for gathering, cleaning and packing eggs, but probably increase in value with increased size of flock.

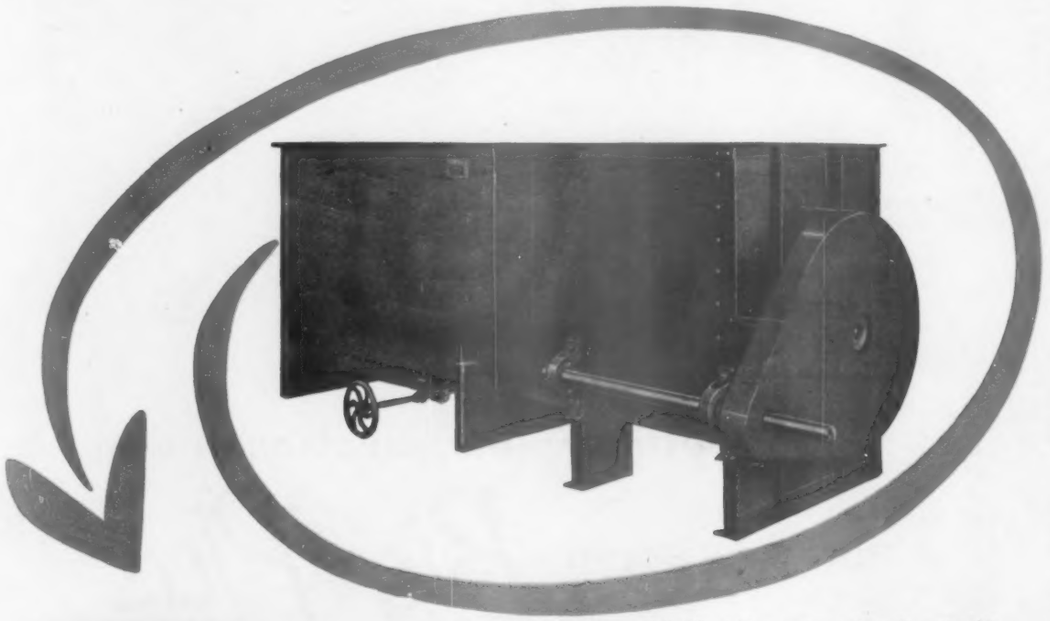
It seems reasonable to assume that year-round confinement, automatic watering of layers and of pullets on range, droppings pits, some type of community nest, feed stored in the house and fan ventilation should be considered minimum requirements to efficient operation in large-size flocks, according to Miss Cooke.

Although only five cooperators reported using laying rooms, they appear to save considerable time, cutting the time of gathering and cleaning by just about one half.

Feed Handling Listed

Other labor savers that were not covered in the survey but were reported favorably by some cooperators are bulk feed delivery, overhead feed storage with chutes, wide doors to admit large cleaning equipment, egg coolers and special egg rooms. For multi-story houses chutes for removing litter from upper floors and a silage blower for adding new litter are obvious labor savers.

It did not appear that every operator was completely satisfied with his facilities. For example, one cooperator who had 4,000 hens on four



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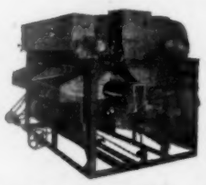
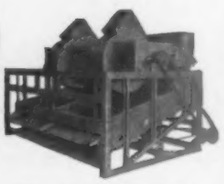

Super Cleaner—Receiving Separator


Hi-Capacity Receiving Scalper

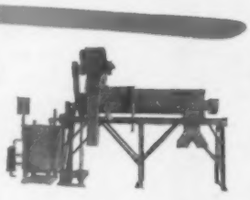
Vertical Batch Mixers

Corn Cutters and Graders

OK Bagging Scale—Series A, B

Horizontal Batch Mixer

Cut Crimper—Single Pair Roller Mill


Duplex Agitator Molasses Mixer

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floors of a remodeled dairy barn said that if he were building he would have only two stories, at least for that size flock. In another case, a remodeled barn was somewhat too small to be really efficient after taking off the necessary space for stairway, landings and feed storage.

That cooperators are looking forward to still further improvement is indicated by such remarks as, "should have a little carrier or drag for cleaning pits and litter." Another cooperator listed as the most important labor saver, "Automatic watering, if we had it." Some were looking forward to having facilities that would enable them to raise their pullets in confinement.

Miss Cooke states that family labor can, in most cases, handle the nearly 90% of daily chore time involved in feeding, watering and egg handling, due to automatic equipment, convenient feed storage and egg room facilities. For example, 600 hours per year reported as average requirement for caring for a flock of 400 hens in USDA Statistical Bulletin 161 would cover the entire time required for gathering, cleaning and packing of eggs from a 1,250 hen flock on the basis of this survey, a job that is frequently handled by the farm woman and the children.

Summary

Miss Cooke summarizes the survey in this manner:

1. The large flock—1,000 or more hens can, through proper use of labor saving equipment, be handled as part of a general farm business.
2. Such a flock can compete with the other livestock enterprises as a profitable use of labor.
3. The large flock makes efficient use of family labor.
4. Gathering, cleaning and packing of eggs took 68% of the daily chore time.
5. The bigger the flock, the greater are the opportunities for reducing labor.
6. Minimum labor savers (reported by more than 80%) include complete confinement of layers, built-up litter, automatic watering in laying house and on range, droppings pits, some type of community nests and mechanically controlled ventilation.
7. It seems safe to assume that return per bird will be higher than in the average farm flock.

Lighting Experiments With Layers Reported

DAVIS, CAL. — Chickens usually lay more eggs when stimulated by on-and-off lighting rather than by continuous lighting, according to Wilbor O. Wilson and Hans Abplanalp, department of poultry husbandry, University of California.

The researchers reported: "In a series of four tests, White Leghorn pullets and hens were kept in windowless climatic chambers at relatively stable temperatures. In four out of five comparisons, egg production of a group with intermittent light exceeded that of a comparable group with continuous light."

The scientists also came up with other conclusions based on the tests: Hens are more affected by light changes than pullets; less than 14 hours of light per day, whether continuous or intermittent, reduces egg production; and good layers are more resistant to shocks from light changes than poor layers.

Poultry Advice

LINCOLN, NEB. — Feed requirements for laying hens are outlined in the latest in a series of circulars on Poultry Profit Pointers entitled "Feeding for Egg Production," the University of Nebraska College of Agriculture announces. Copies of the circular are being distributed through county agents and feed dealers. The circular gives feed recommendations, outlines feeding methods and includes advice on feeder and waterer space.

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If you increased filling production from 12 per minute to 15 or more per minute — without paying a penny more for sleeve or special insert bags . . . what would be the percentage of increase — and dollar savings to you — per ton — per hour?
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CONVENTION CALENDAR

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings a new procedure has been established in making up this department. The listings added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

1957

July 16-19—American Poultry & Hatchery Federation; Municipal Auditorium, Kansas City; sec., Don M. Turnbull, 521 E. 63rd St., Kansas City 10, Mo.

1956

Dec. 3-4—Farmers Elevator Assn. of South Dakota; Huron, S.D.; sec., C. C. Anderson, 423 Citizens Bldg., Aberdeen, S.D.

Dec. 3-5—Midwest Feed Production School, Muehlebach Hotel, Kansas City, Mo.; sponsored by Midwest Feed Manufacturers Assn.; Lloyd S. Larson, executive vice president, 20 W. 9th St. Bldg., Kansas City, Mo.

Dec. 6-7—Washington Animal Industry Conference; Western Washington Experiment Station, Puyallup, Wash.

Dec. 6-7—North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh, N.C.; chm., George Wise, Animal Nutrition Section, North Carolina State College, Raleigh, N.C.

Dec. 7—Iowa Sheep Day; Iowa State College, Ames, Iowa; chm., Emmit Haynes, Animal Husbandry Department.

1957

Jan. 7-8 — Kansas Formula Feed Conference, Kansas State College, Manhattan; chm., F. W. Atkeson, head of department of dairy husbandry, Kansas State College, Manhattan.

Jan. 8-10 — National Turkey Federation, Cincinnati, Ohio; exec. sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 11-12—Kansas Seed Dealers Assn.; Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

Jan. 13-15—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque, N.M.; exec. sec., H. B. Hening, P.O. Box 616, Albuquerque, N.M.

Jan. 14-15—Northwest Retail Feed Assn.; Hotel Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis 15, Minn.

Jan. 14-16—Conference on Processing of Cottonseed Meal as Related to Its Nutritive Value; Southern Utilization Research Branch, U.S. Department of Agriculture, 1100 Robert E. Lee Blvd., New Orleans, La.; chm., Dr. A. M. Altschul, Southern Utilization Research Branch, 1100 Robert E. Lee Blvd., New Orleans 19, La.

Jan. 17-18—Arkansas Feed Manufacturers Assn., Marion Hotel, Little Rock, Ark.; sec., T. E. Mosley, P.O. Box 149, Little Rock, Ark.

Jan. 20-22—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 22-23—North Dakota Poultry Industries Convention; Elks Club, Fargo, N.D.; Irving J. Mork, North Dakota Agricultural College, State College Station, Fargo, N.D.

Jan. 23-24 — Massachusetts Dairy Farmers Seminar; University of Massachusetts, Amherst, Mass.

Jan. 24-26—Boston Poultry Show and New England Poultrymen's Conference; Mechanics Bldg., Boston; chm., Dr. Alfred Van Wagenen, Northeastern Poultry Producers Council, 10 Rutgers Place, Trenton, N.J.

Jan. 28-30 — Southeastern Poultry & Egg Assn.; Dinkler-Plaza Hotel, Atlanta; exec. sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Jan. 30-Feb. 2—American Dehydrators Assn., Edgewater Gulf Hotel, Edgewater Park, Miss.; exec. vice pres., Joseph Chrisman, 430 Board of Trade Bldg., Kansas City, Mo.

Jan. 31-Feb. 1—University of New Hampshire Poultry Health Conference; University of New Hampshire, Durham, N.H.; chm., Richard Warren, extension poultryman.

Jan. 31-Feb. 1—University of New Hampshire Poultry Health Conference; University of New Hampshire, Durham, N.H.; chm., Prof. W. C. Skoglund, Poultry Dept.

Feb. 4-6—Assn. of Southern Agricultural Workers, Birmingham, Ala.

Feb. 5-6—Hoosier Turkey Trot; Purdue University; sec., David D. Jackson, Indiana State Poultry Assn., Turkey Dept., Poultry Bldg., Purdue University, Lafayette, Ind.

Feb. 7-8—Oregon Animal Industry Conference; Oregon State College, Corvallis; chm., Dr. J. R. Parker.

Feb. 10-12—Wyoming Grain, Feed & Seed Dealers Assn.; Casper; sec., Everett L. Berry, P.O. Box 118, Sheridan, Wyo.

Feb. 14-15 — Washington State Feed Assn.; Olympic Hotel, Seattle; sec., J. G. Wilson, 814 Second Ave. Bldg, Seattle 4, Wash.

Feb. 14-15 — Utah Feed Manufacturers & Dealers Assn.; Brigham Young University, Provo, Utah; sec.-treas., Dr. Lawrence Morris, Animal Husbandry Dept.

Feb. 15-17—Institute of American Poultry Industries Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; pres., Cliff D. Carpenter, 221 North LaSalle St., Chicago 1, Ill.

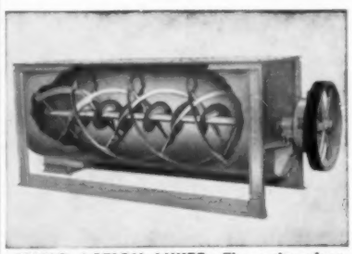
Feb. 17-19 — Midwest Feed Manu-

(Continued on page 54)

Advertisement

NEW PRODUCT NEWS

THE COMPLETE LINE OF HIGH CAPACITY MIXERS



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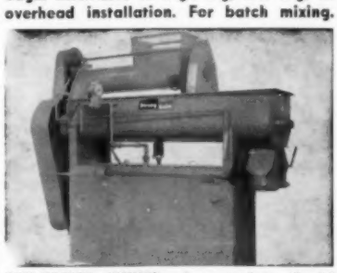


UNI-BLEND MIXER: A complete liquid supply and application system which automatically heats, measures and applies any liquid to dry feed. Contains a high capacity, slow speed twin rotor mixer. Cuts HP and maintenance requirements. For continuous mixing.

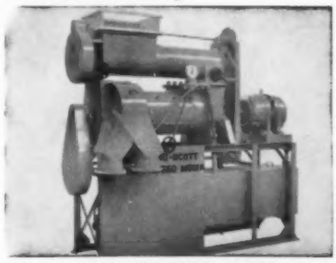
SPECIFICALLY DESIGNED FOR YOUR PARTICULAR MIXING OPERATION

Strong-Scott mixers are designed for dry mixing—liquid application — or a combination of both. These mixers, through combined feed mixing knowledge and versatility, are boosting production and cutting costs all over the country.

Years of research, development and experience have gone into the engineering and manufacture of Strong-Scott mixers. The high standards of quality construction are maintained in each of these mixers. Every feature, triple-action mixing—twin rotor agitation—and high or slow speed mixing, has been developed with your needs in mind. The complete line meets all requirements for batch or continuous mixing.

Shown here are five mixers with proven performance records. Each machine is designed for a specific job, and can handle wide ranges of materials with the highest capacities and greatest efficiencies known.

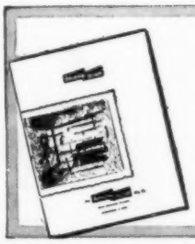
HIGHER CAPACITIES AND GREATER SAVINGS THROUGH LOWER POWER AND MAINTENANCE COSTS



NO. 1 AND 2 MOLASSES MIXER: Combines dry ingredients with molasses or fats to perfection, through high speed continuous mixing. Capacities up to 12 tons per hour are easily obtainable. Contains a 100-gallon liquid supply tank.

PORTA-BLEND MIXER: A new, custom-designed, portable, low cost continuous mixer. Gives extremely accurate blending of molasses, fats, or fish solubles with formula feeds. Just wheel it to where you want to use it, and plug it in.

BIG TWIN MIXER: A slow speed continuous mixer with twin-rotor assembly. Mix up to 24 tons per hour of light, bulky ingredients with 45% to 50% molasses application. Produces a completely uniform finished product.



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Guards the entire digestive tract, knocks out dangerous bacteria

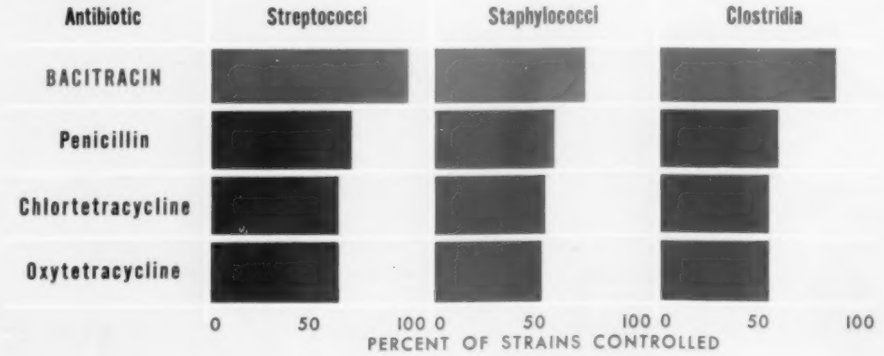
Stops Secondary Invaders — During periods of sickness or stress, resistance is lowered and secondary bacteria invade poultry and swine. The gram-positive bacteria called Streptococcus and Staphylococcus are the most numerous of the secondary invaders. Another organism, Clostridium produces toxic breakdown materials in the intestinal tract. Bacitracin is the most effective antibiotic against these troublemakers because it controls more strains of these bacteria than other feed antibiotics. In test after test, Bacitracin has proved effective in stimulating appetites, and controlling the secondary invaders that follow air-sac disease, blue comb, infectious sinusitis, and nonspecific enteritis.

Fights Black Scours — A hog trouble-maker called Vibrio is often responsible for the outbreaks of black (bloody) scours. Bacitracin is the most effective antibiotic in fighting this gram-negative bacteria because it controls more of the disease causing strains of Vibrio bacteria. Tests show that Bacitracin is effective in many swine dysenteries where other medication has failed.[1] Additional tests point out that when swine scours are treated with Bacitracin, the recovered animals are more likely to become thrifty.[2]

(1) Graham, R., Boley, L. E., and Woods, G. T.: Bacitracin in Necrotic Enteritis of Swine. North Am. Vet. 31:736.

(2) Boley, L. E., Woods, G. T., Hatch, R. D., and Graham, R.: Studies on Porcine Enteritis. II Experimental Therapy with Sulfathalidine, Sulfamethazine, Sodium Arsanilate, and Bacitracin in a Natural Outbreak of Swine Dysentery. Cornell Vet. 41:231.

BACITRACIN MOST EFFECTIVE IN CONTROLLING THESE HARMFUL BACTERIA



THESE CHARTS show the relative effectiveness of Bacitracin and three other antibiotics in controlling some of the more common bacteria that invade animals during periods of stress and disease. Bacitracin is a most effective antibiotic in fighting secondary invaders because it controls more bacterial strains in each group. That's why high-level feeds made with BACIFERM are so effective in combatting dangerous bacteria.

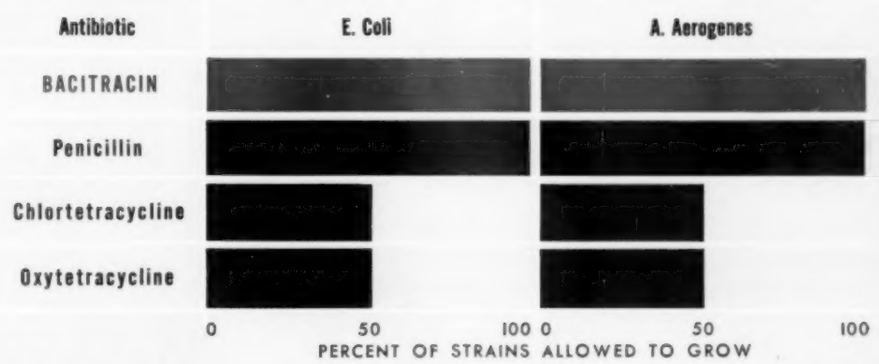
RM®

CSC **BACITRACIN ANTIBIOTIC SUPPLEMENTS**

SELECTIVELY BENEFITS THESE VITAMIN-PRODUCING BACTERIA IN POULTRY AND SWINE

SOME ANTIBIOTICS inhibit the growth of beneficial bacteria but Bacitracin does not. Its selective activity controls dangerous bacteria, yet allows helpful bacteria to flourish. For example, the charts show that bacitracin allows the beneficial gram-negative bacteria *E. coli* and *A. aerogenes* to grow. Other antibiotics interfere with the growth of these important vitamin-producing bacteria in the intestinal tract. For the right selective activity, choose BACIFERM for your high-level antibiotic feeds.

BACITRACIN ALLOWS MAXIMUM GROWTH OF VITAMIN-PRODUCING BACTERIA



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...SAVES $3.00 TO $6.00 PER TON OF FEED

Bacitracin, penicillin, and tetracycline-type antibiotics used at high levels show equal results on a gram-for-gram basis. But only BACIFERM gives maximum performance and cuts fortification costs at least 25%.

EXTRA VALUE

...FURNISHES BONUS VITAMINS AT NO EXTRA COST

All BACIFERM antibiotic supplements contain selectively-active Bacitracin *plus* naturally-produced B-vitamins, high protein, vitamin K and unidentified growth factors.

EFFECTIVE

...ON FARM AFTER FARM FOR POULTRY AND SWINE

Results show that BACIFERM stimulates appetites, keeps animals eating when disease or other stress conditions occur. BACIFERM gets more animals to market faster, by hastening recovery and reducing mortality.

BACIFERM

Bacitracin Antibiotic Supplements

Combination antibiotic supplement available:
Ask for **BACIFERM®-PB,** a BACIFERM supplement combining bacitracin and penicillin.

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facturers Assn., Broadmoor Hotel, Colorado Springs, Colo.; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 18 — New Mexico Feeders Day; New Mexico A&M College, State College, N.M.; chm., J. H. Knox, animal husbandry department.

Feb. 19-20 — Virginia Polytechnic Institute Nutrition School for Feed Men; Hotel Roanoke, Roanoke, Va.; chm., Paul M. Reaves, dept. of dairy science, VPI, Blacksburg, Va.

Feb. 24-26—Ohio Grain & Feed Dealers Assn.; Nell House Hotel, Columbus, Ohio; sec., G. E. O'Brien, Ohio St., Greenville, Ohio.

Feb. 24-26—Colorado Grain, Milling & Feed Dealers Assn.; Denver, Colo.; sec., R. B. Kelly, 714 Cooper Bldg., Denver 2, Colo.

March 13—Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; exec. director, Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

March 13-17 — Grain Processing Machinery Manufacturers Assn.; Edgewater Gulf Hotel, Edgewater Park, Mississippi; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

March 14-17 — Pacific Dairy & Poultry Assn.; Ambassador Hotel, Los Angeles; assn. office, 1304 E. Seventh St., Los Angeles 21, Cal.

March 14-15—Oregon Feed & Seed Dealers Assn., Multnomah Hotel, Portland; mgr., Huss Hayes, Lewis Bldg., Portland 4, Ore.

March 17-18—Quad-State Convention; Martin Hotel, Sioux City, Iowa; sec., Don Suttie, Sioux City Grain, Feed & Seed Assn., Box 341, Sioux City.

March 21-22 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm. Dr. G. Lynn Romoser, Department of Poultry Husbandry, University of Maryland, College Park, Md.

April 4-6—Animal Health Institute, annual meeting; Greenbrier, White Sulphur Springs, W. Va.

April 10-11—Texas Feed Manufacturers Assn.; Gunter Hotel, San Antonio, Texas; sec., Ben E. Schmitt, 528 Bewley Bldg., Ft. Worth, Texas.

April 12-13—Texas Grain & Feed Dealers Assn.; Gunter Hotel, San Antonio, Texas; sec., Ben Ferguson, 614 Meacham Bldg., Ft. Worth 2, Texas.

April 25-27—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

April 26—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm. W. M. Beeson, Department of Animal Husbandry, Purdue University, Lafayette, Ind.

April 26-May 1—National Fisheries Institute; Edgewater Beach Hotel, Chicago; Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

May 1-3 — American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec.-treas., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 19-20 — Missouri Grain, Feed & Seed Assn., Hotel Connor, Joplin, Mo.; sec., D. A. Meinershagen, Eagle Mill & Elevator, Higginsville, Mo.

May 20-21 — National Cottonseed Products Assn.; Shoreham Hotel, Washington, D.C.; sec., John F. Moloney, 19 S. Cleveland St., Memphis 4, Tenn.

June 9-11—Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

June 10-11—Eastern Federation of Feed Merchants; Hotel Commodore, New York; exec. dir., Austin W. Carpenter, Sherburne, N.Y.

June 11-12 — Montana Nutrition Conference; Montana State College, Bozeman; chm., O. O. Thomas, Animal Industry Department.

June 17-18—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 3240 Peachtree Road Bldg., Room 210, Atlanta 5, Georgia.

June 17-19—Association of Southern Feed & Fertilizer Control Officials; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sec., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky.

Sept. 11-12—Michigan State Hatchery Conference; Michigan State University, East Lansing, Mich.; chm., Harry E. Hathaway, Michigan State Poultry Improvement Assn., East Lansing, Mich.

Sept. 11-13 — American Pet Food Manufacturers; Drake Hotel, Chicago; sec., R. L. Kathe, APFM Division of American Feed Manufacturers Assn., 53 W. Jackson Blvd., Chicago 4, Ill.

Oct. 3-4—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, poultry science department.

Oct. 7-9 — Northeastern Poultry Producers Council Poultry Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

Leo B. Grant Named to New Position at Dow

MIDLAND, MICH.—The appointment of Leo B. Grant, manager of the New York office since 1949, to the newly created position of sales manager of the chemicals department, with headquarters in Midland, Mich., has been announced by Donald Williams, vice president and director of sales, Dow Chemical Co. James Day, supervisor of chemical sales in the New York office, will succeed Mr. Grant.

The appointments will be effective Jan. 1.

Mr. Grant joined the company in 1927 and was associated with the magnesium department for more than 20 years. He joined the executive staff of the New York office in 1948. Mr. Day joined Dow as a research chemist in 1936. He has been in sales work since 1939 and with the New York staff since 1952.

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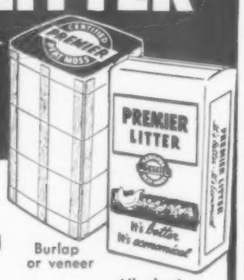
other materials absorb up to 5 times their weight
Premier absorbs up to 15 times more!



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This feed blending line in the North Dakota Mill & Elevator Company includes W & T Merchen Scale Feeders, with a complete electric control system which permits selection of the desired formula from a remote operating panel. On this modern, fully automatic blending line, over twenty-five ingredients are fed continuously in the blending of formulated mash feeds.

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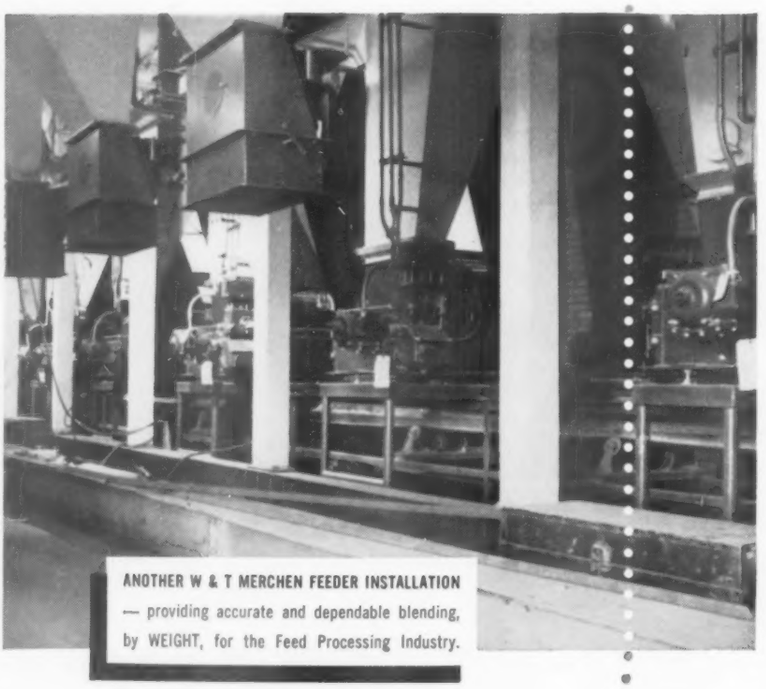
W & T Representatives — trained in materials handling — will be glad to show you how W & T Merchen Feeders can solve your feeding and blending problem. There is no obligation, so why not call them today?



ANOTHER W & T MERCHEN FEEDER INSTALLATION — providing accurate and dependable blending, by WEIGHT, for the Feed Processing Industry.

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● **STABILITY:** Catalin AC-3 possesses carry-through effectiveness and thus protects the final product from heat (cooking, frying or baking) . . . extends "fresh" taste goodness through to consumption.

● **ECONOMY:** Catalin AC-3 is unusually effective in very low concentrations. One pound will safety-treat 10,000 lbs. of fat.

Catalin AC-3 adds a negligible little to production cost but much to product-security. Samples, literature and technical assistance are yours upon request. Inquiries invited.

ADVANTAGES

For better health . . .
AC-3 protects fat-soluble vitamins A, D and E, vital for robust health. It thus also prevents "crazy chick disease" (encephalomalacia), caused by a vitamin E deficiency.

For better appetite . . .
AC-3 checks rancidity of natural fats in feed . . . also added fats . . . hence preserves appetizing taste, odor and color.

For better growth . . .
AC-3 stabilizes unsaturated fatty acids in the feed, all of which are essential to maximum growth.

For better skin color . . .
The poultry industry places a premium on birds with good skin and shank color. AC-3 improves pigmentation by increasing utilization of carotenes, the natural yellow coloring substances in feed.

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NATIONAL BENTONITE . . . Provides Greater Pellet Firmness . . . and strength—prevents product crumbling, yet produces pellets easily eaten by livestock. Makes it easy to use many hard-to-pellet ingredients such as milo grain and some types of cottonseed meal

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Effective Cost Control Methods

An Effective Cost Control Program Includes Such Things as Inventory Control, Production Planning, Daily Cost Control, Budgets, Preventive Maintenance and Work Simplification

By Lowell Judd
Albers Milling Co.

EDITOR'S NOTE: In these days of increased costs, effective cost control in feed manufacturing operations has taken on even greater importance. In the accompanying article, Lowell Judd, superintendent of the Kansas City plant of Albers Milling Co., lists and explains some of the methods of reducing or holding down mill operation costs. This subject is of considerable interest at this time because of the attention focused on costs by the feed mill cost study, sponsored by the Midwest Feed Manufacturers Assn., which will be discussed at the Midwest Feed Production School. The author of this article is known for previous discussions of cost control and other feed production topics, and he took an active part in the Midwest cost study project.

Lowell Judd

With production costs still rising and competition becoming greater, management must constantly seek every means of increasing efficiency to deliver the best product at the lowest cost to its customers. So, enlightened management is looking more and more critically at effective cost control methods which affect company profits.

There are only two ways of increasing these profits: (1) By increasing sales, and (2) by decreasing operating costs. From each increased sales dollar, an average of only 4¢ goes to net profit. On the other hand, every dollar saved by reduced operating costs is profit. Therefore, the potential is greater by reducing operating costs than by any other means at our disposal.

Maybe we should explore some of the more important methods that will help to achieve this goal.

INVENTORY CONTROL: Foremost among these is a good perpetual inventory system. In setting up this system, we should first decide upon a minimum and maximum quantity of each ingredient required to maintain production demands. The minimum should be large enough to take care of any sudden influx of business for a period of time until the purchasing department can re-evaluate the usage and procure additional materials. The maximum should be geared to the storage area available and the shipping time required.

With a minimum and maximum established, proper scheduling becomes a very important factor in any cost control program. There are many problems in purchasing and scheduling materials into the plant which require good coordination between all departments for smooth operation. By use of past sales records and present sales trends, the sales department could make a monthly sales estimate. This will permit the purchasing department to figure monthly requirements and schedule materials according to seasonal daily usage.

After the materials have been bought and scheduled, the purchasing department should follow through and see that the ingredients are shipped on time. In case they have not been shipped, it should be their responsibility to procure additional materials elsewhere so that they will reach the plant as previously sched-

DAILY STANDARD COST

Operation	Total Tons Produced	Total Cost Of Production	Actual Cost Per Ton	Standard Cost Per Ton
Packing 100-lb. Dairy				
Packing 50-lb. Dairy				
Packing 100-lb. Other Feeds				
Packing 50-lb. Other Feeds				
Packing 25-lb. Other Feeds				
Mixing Dairy				
Mixing Other Feeds				
Shipping Rail				
Shipping Truck				
Receiving Sack				
Receiving Bulk Grain				
Receiving Bulk Soft Feeds				

Can I Eliminate?
Can I Combine?

Flow Process Chart

Can I Change Sequence?
Can I Simplify?

DETAILS	PRESENT / PROPOSED	METHOD	OPER., TRANS., STORAGE	INSPECT.	DIST. IN FEET	TIME IN MINUTES	IDEAS AND COMMENTS
			○ ○ ▽ □				
			○ ○ ▽ □				
			○ ○ ▽ □				

ceiving foreman, with a two-man crew, lacks a half-hour to complete the unloading of a car. To finish the car would require only one half hour premium time, which would cost the company much less than one excessive day's demurrage.

PRODUCTION PLANNING: Since production is the basis of any good cost control program, it is essential that this phase of operation be given the utmost attention. While some of the larger plants have an elaborate planning department that plans production several days in advance, the average plant usually should plan its production only 24 hours ahead. In order to plan efficiently in advance, it is essential that the planning department utilize the inventory information to its best advantage. There is nothing more costly to a company than to run out of an ingredient which would necessitate a change in plans. And in most cases, a change would also cause a delay in service to the customer, which is very important in today's competitive market.

To plan a day's operation, all orders should be compiled and like items grouped to facilitate longer production runs. Naturally this would minimize production changes which would keep men and machines in more efficient operation. For example, if a truck should come in without an advance order and want items that are not in stock, it usually requires expensive production changes in the plant as well as a delay in service to trucker. Usually it may be more profitable for the company to accept collect calls on advance orders so that production can be planned in advance.

Efficiency experts say the average worker is productive only 33 minutes of each hour and the remaining 27 minutes are consumed by poor planning, necessary production changes, relief periods, etc. It is easy to see that a well planned production schedule will increase the efficiency by reducing some of these 27 wasted minutes.

In most companies, employee fringe benefits—paid vacations, paid holidays, welfare insurance, etc.—cost the company more than 20¢ per hour over and above regular wages. This amounts to over $400 per year per employee, which makes it imperative that management should operate with a minimum number of personnel. In view of these facts, it may be more economical to work regular crews on an overtime basis during a sudden rise in business rather than hire inexperienced help for a short period of time.

DAILY COST CONTROL AND BUDGETS: One of the main purposes of any cost analysis system is to provide data as accurately as possible which will enable the accounting department to calculate true costs. Also, in order to have an efficient cost control program, we must control the expenditures day by day. Naturally it is not necessary to show a daily unit cost on every operation in the plant. There are many operations in which the costs are more or less fixed due to the fact that the number of men involved does not vary, regardless of the tonnage produced. Some good examples of this would be the maintenance crew, sweepers and supervisors.

It is necessary, however, to select the key operations in the plant. Key operations mean those operations which are tied in with other cost centers in such a manner that the key operation has a direct bearing on the

File identification

WORK SIMPLIFICATION SUMMARY SHEET

Description of Study _____

Cycle or Interval Studied _____

Study Prepared by _____

Date _____ Plant _____ Dept. _____

Class _____ Date _____ COMMENTS _____

SUMMARY PER CYCLE STUDIED

	Present			Proposed			Reduction		
	L.H.	R.H.	Total	L.H.	R.H.	Total	L.H.	R.H.	Total
No. of Operations ○									
No. of Transportations ○									
No. of Storages or Delays ▽									
No. of Inspections □									
Distance Traveled									
Time (Man Hours or minutes)									
Material									

_____(Reduction time and material per Cycle) multiplied by _____(Approximate Number of Cycles per year) equals _____ which is equivalent to _____ dollars per year.

ESTIMATED COST OF CHANGE

	$
Labor	
Material	
Misc.	
Total Cost	

Proposed method will pay for itself in _____ months.

Attached are:

Flow Process charts _____ Sheets of Present Method _____ Sheets of Proposed Method

Operation charts _____ " " " " _____ " " " "

Activity charts _____ " " " " _____ " " " "

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Follow up on Back

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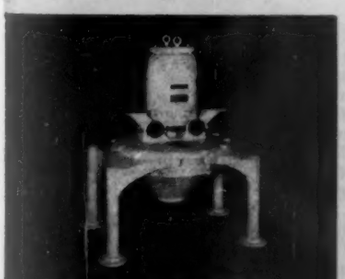
- DISPERSION
- AIR SEPARATION
- PARTICLE SIZE REDUCTION
- PNEUMATIC CONVEYING
- DUST RECOVERY



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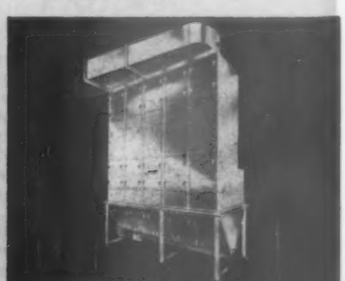
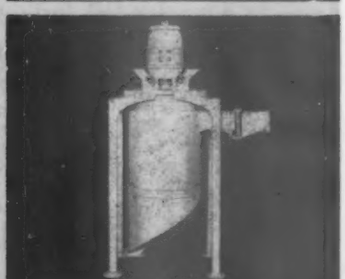
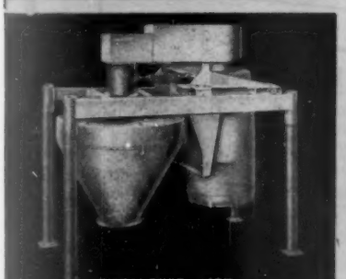


ENTOLETER-SIMON SUCTION FILTER DUST COLLECTOR . . . the most economical, high efficiency dust recovery equipment.

ENTOLETER IMPACT MILL . . . for centrifugal mixing or particle size reduction with belt-driven, constant speed or variable speed drive . . . in capacities up to 60 tons per hour.



ENTOLETER ASPIRATOR . . . for separation by air of mixtures consisting of materials of varying density or air foil.



ENTOLETER "40" . . . for grinding and particle size reduction applications with extreme impact velocities and/or capacities to 100 tons hourly.

PNEUMATIC CONVEYING . . . simplicity of design, and choke-free operation and low power requirements assure continuous efficiency.

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FOR FEED TABLE AND SPOUT INSTALLATIONS

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have been saved by the Chicken Feed Industry since we initiated this new revolutionary method of Vitamin D_3 feed fortification four years ago with this advertisement

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The only Mineral Stable Product with a biologic history of continuous stability month after month for four years.

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A product so widely accepted by the feed industry that it has often been imitated, but never equalled by other manufacturers.

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We appreciate the loyalty of our thousands of steady users and the cooperation of N. V. Philips Roxane, The Netherlands, the world's largest manufacturer of Vitamin D products.

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SAVE UP TO $100.00 PER TON

MAKE YOUR OWN 'DRY D'!

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MINERAL STABLE VITAMIN D_3

The most revolutionary development in the past 16 years. The only Mineral Stable D with a history of 2 years' research with mixtures containing ground limestone, steamed bone-meal, calcium phosphate, magnesium sulfate, ferrous sulfate, copper sulfate, manganese sulfate, cobalt sulfate, iodized sodium chloride.

HERE'S HOW TO MAKE A FULL TON OF FRESH DRY D

with the usual 10% margin of safety! First . . . you simply put 2,000 pounds of carrier (soybean meal, corn meal, etc.) in your mixer. Second . . . you add the contents of one hermetically sealed tin (16½ pounds) of BO-DEE (Mineral) STABLE VITAMIN D_3 powder to the carrier. Then, mix until homogeneous. (Time varies with equipment—usually about 20 minutes.) Finally, you sack in the usual manner, affixing identification tags which are furnished free with each tin, upon request.

WHAT IS BO-DEE Mineral STABLE VITAMIN D_3?

It's a free-flowing powder, guaranteed to be stable in the presence of most minerals for a period of 6 months. And remember this! When you make your own DRY D, you insure the quality of your product from start to finish—and, more important, you save up to $100.00 per ton! . . . with the usual 10% margin of safety!

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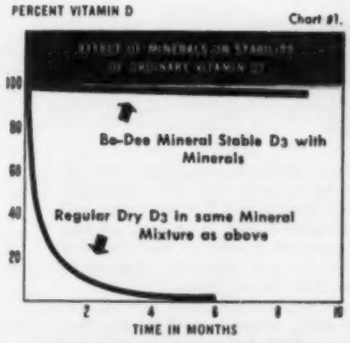
PERCENT VITAMIN D

Chart #1.



Above chart shows rapid and complete deterioration of Vitamin D3 in a mixture of customarily used feed minerals. 9 parts minerals to 1 part Vitamin D in cereal carrier.

Send for technical descriptive booklet.

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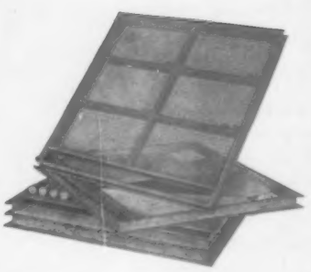
For modern operating advantages and production economies, choose the new Model "M" Bar-Nun for your next scalping or grading requirement. Model "M" Bar-Nun Rotary Sifters are available in several sizes and models, with choice of flows. Write for details and recommendations.



Bar-Nun sieve frames may be stainless steel, magnesium or wood. Illustration shows stainless steel frames and trays, and ball cloth cleaners riding on coarse wire screen beneath the sieve cloth. Sieves are held firmly in place in the all-metal box, but are easily removed.

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cost of these other operations. The selection of key operations will vary from plant to plant due to a variation in plant layouts.

In order to break down and analyze these cost centers, most plants might use some or all of the following headings: Mixing, packing, shipping and receiving. The mixing operations can be divided into dry feed mixing and molasses mixing. The packing operation can be broken down into 100-lb. dairy, 100-lb., 50-lb. and 25-lb. mash and pellets. The shipping costs can be divided into rail and truck shipments and the receiving can be separated into sack or bulk materials.

All labor time must be broken down and charged according to the unit involved so that it can be compiled along with the volume produced. These figures will form the basis for filling out a daily cost form. Some cost forms include such items as operation name or code, total tons handled, total labor cost, actual cost per ton for each unit, and the standard cost per ton for that unit. The standard cost figures will be constant each day. They are goals to be strived for which may be predetermined by analyzing each operation. (See accompanying daily cost form).

In order to obtain maximum benefits from this information, copies should be given to each department head so that he can compare the daily cost of his operations. This will cause him to endeavor to do a better job and strive to meet the standards.

Heretofore, we have been dealing only with direct labor costs and methods of controlling them. Equally as important is the control of indirect costs such as maintenance supplies, building repairs and indirect labor. Remember that these are as much a part of the over-all manufacturing cost as is direct labor; therefore, we must have some method of keeping them under control. The most practical method is to utilize a budget. In setting this up, the amount of money to be allocated to each item must be predetermined. The important thing to remember is that a budget is worthless unless it is adhered to. However, it is well to mention that it is impossible to stay within a reasonable budget each month of the year, but the over-all monthly average of each item must not exceed the total allocated for the year. Using the maintenance supply budget as an example—there may be costly repairs during a particular month which would make it impossible to adhere to the budget for that month. We must, therefore, make up this deficit during the succeeding months.

Another pertinent point in connection with staying within a budget is to have a file system by which all labor and material required to maintain a given piece of equipment can be recorded. This enables us to determine the exact cost of maintaining each machine and in turn, will point out the machine which requires an excessive amount of repairs. This is very helpful when it is necessary to operate old equipment since it is quite possible that more money is being spent on a machine for repairs than the actual value of this machine. If this be the case, it is usually less expensive over a long period of time to replace the old machine with a more efficient one.

PREVENTIVE MAINTENANCE: In the average plant, a company has invested more than 15,000 dollars per employee for buildings and equipment, and it spends more than $1 per ton for labor and maintenance supplies to maintain this equipment. Therefore, a good preventive maintenance program is very essential for an efficient operation. To cite an example, there is probably less attention given to an endless bucket elevator than any other piece of equipment in the plant since it is totally enclosed and inconspicuous. However, an elevator belt running over a 36-in. head pulley turning at 43 RPM for 16 hours a day will travel 20 thousand miles a year. This is six times greater than the distance from San Francisco to New York City. Certainly any piece of equipment such as this operating continuously deserves some attention. For instance, key elevators should be shut down weekly for inspection of buckets, bolts and proper tram. Other elevators might require less frequent inspection.

Another piece of equipment which requires constant observation is the pellet mill. In order to obtain maximum production, the proper adjustment of the rolls is very important. Also, an hour recording meter installed on each machine will record the number of hours it has operated. This is very helpful for the operator to determine the approximate time the die and rolls should be changed. And in addition, this information is helpful to compare the production of the various sets of die and rolls.

One of the key men in a preventive maintenance program is the man responsible for lubricating the equipment. In addition to lubricating, he should observe the condition of all equipment and advise the maintenance department of any necessary adjustment or repair.

WORK SIMPLIFICATION: Management should take the time to analyze each producing operation to see if it is receiving maximum efficiency from both labor and equipment. This can be accomplished most effectively through a work simplification program.

The objective of work simplification might be defined as looking forward to getting better products or better service with less effort, in less time, with greater safety, and at lower costs. This expression of fundamental purpose is so sound and basic that it seems obvious that it is our objective.

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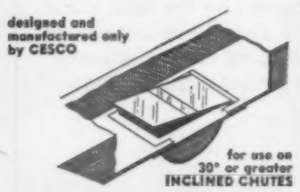

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SOME VALUABLE SALES TERRITORIES AVAILABLE

A better product at lower cost at the right time has always been the requirement of the American consumer. To attain this objective, one of the main factors is increased production. This does not mean a speed-up of the worker by requiring him to work harder or faster; but it should be accomplished by eliminating the unnecessary parts of the job.

Increased productivity might be obtained by one or more of the following methods:

1. Better methods and procedure.
2. Better tools.
3. Better equipment.
4. Better materials.
5. Better processes.
6. Better product designs.
7. Better package designs.
8. Better working conditions.

One way to determine which of the above methods should be used is by constructing a "flow process" chart of the operation. This gives a simple picture of the sequence of events in any operation or process, and includes information for analysis such as time required and distance moved. The chart has great value in presenting information in condensed form. (See accompanying flow process chart).

Another operation might require a "hand operation chart." This is a detailed breakdown of the motions of one particular operator who performs only one of the details shown on the flow process chart. Once this over-all process has been questioned, it is often advantageous to select the jobs done by different people in the operation and to analyze them further. (See hand operation chart).

Both the present operation and the proposed operation should be charted, and after the flow process and the operation charts have been completed, a summary sheet might be used to compile the information to show the time and monetary saving on the operation. (See summary sheet).

For example, in one of the Albers plants, a supervisor turned in a work simplification project of adjusting the weights on a packing operation. A flow process chart of the present operation showed an operator must travel a total distance of 106 ft. to adjust the scale setting with an average time requirement of 4 minutes per correction. The suggestion he proposed was simply to lower the weight adjustment bar so the operator could make necessary adjustments at his regular work station. The proposed flow process chart on this operation showed that all the traveled distance was eliminated and the time required was reduced to 1½ minutes per change for a savings of 2½ minutes. While this doesn't sound like a lot of savings, when you project it times the number of changes required per day times the number of work days per year, the total savings were shown to amount to $622.04 at a cost of only $16.

Some companies hire outside consultants to come in and make job studies; other companies set up departments which do nothing but make job studies and prepare improvements; still other companies believe in the inborn ability in every individual. They present the mechanics and principles of work simplification to the personnel who really know the operation of the plant. While elaborate systems such as these are very good, it should be pointed out for the benefit of those who do not wish to go into work simplification to this extent, a lot can be accomplished by taking the time to thoroughly analyze each operation and plan a better way of accomplishing the same thing with less time or effort. In order to motivate employees to do a better job, we must satisfy as many of their desires as possible. A good work simplification program attempts to tap their latent ability for the good of all.

In discussing effective cost control methods, there is no end to ways and means for management to reduce operating costs. However, just knowing of these methods accomplishes nothing, consequently, alert management should endeavor to find and put into effect any cost reducing procedure that is at its disposal.

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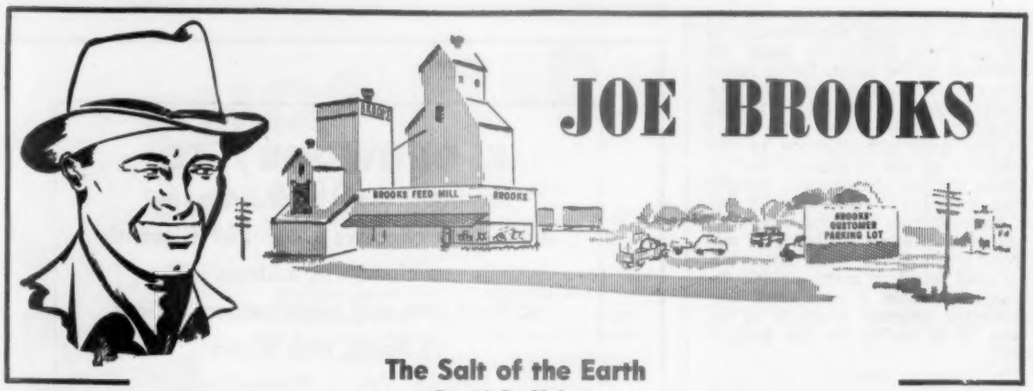


The Salt of the Earth

By Al P. Nelson

It was about 10:30 one cold, frosty December morning, and Joe Brooks sat on a stool at the counter in Happy's Lunch, one block from his mill, munching on a sweet roll and having a cup of coffee. Joe liked to drop in at Happy's, for Happy Harrigan was a stocky, jovial, white-capped and white-aproned fellow who was always cheerful, liked to kid his customers, and who thought no job in the world was more important than keeping people filled with good victuals, so that they could do the world's work.

Joe picked up a salt shaker at his finger tips and asked: "Happy, do you use a lot of salt here?"

Happy, frying a hamburger for a salesman, turned slightly. "Guess I do, Joe, compared to other eating places, but the cost isn't much. Salt hasn't gone up as much as coffee. Funny thing, though, farmers use about twice as much salt and pepper as other folks. They sure lay it on their eggs, hamburgers and other meat dishes."

"Is that so?" Joe mused. "Well, farmers work hard, and they are heavy eaters. And I guess they like their meals heavily seasoned."

"Well, let them have what they want," Happy said, turning the hamburger. "In my book, farmers are the salt of the earth. Without them, we would be up a tree. Trouble is, folks everywhere don't appreciate farmers enough."

"I do, Happy," Joe said. "If farmers—aided by feed men and others—didn't farm so scientifically, food would cost a great deal more than it does. We wouldn't have enough food. Or maybe this nation would be like Russia — have millions starving for lack of enough food every day."

"We sound as if we married farm girls," Happy grinned. "But no foolin', if it wasn't for farmers, my restaurant business would be no good."

Joe nodded. "I know how you feel. Happy, how would you like to have me pay for all the salt you use in your restaurant, in return for a little favor?"

Happy stopped for a second, staring at Joe Brooks. Then he laughed "Now how in the world can you benefit from paying for my salt?" he asked.

Put Up a Sign

Joe grinned. "I would like to have you put up a sign I'll make. It would read: 'Use All the Salt You Want. It's on Joe Brooks, the Feed Man. Joe Also Sells Salt for Animals. If You Need Trace Mineral Salt for Your Livestock Drop Over to Joe's and Get a Couple of Blocks."

Happy smiled, then looked at his shelves, where breakfast foods, canned goods, etc., were stacked. "Well, maybe I could cut down on my display of those items enough to slip in a block of salt, with your sign Scotch-taped to it. But I think I got a still better idea."

"What's that?" Joe had had previous promotional dealings with Happy and knew that he had some good merchandising brains.

"Well," said Happy, cocking his white cap a little, "suppose I number my sales slips, and everytime one hits, 100, 200, 300, and so on, I give a farmer a ticket saying he can pick up a block of salt free over at your mill."

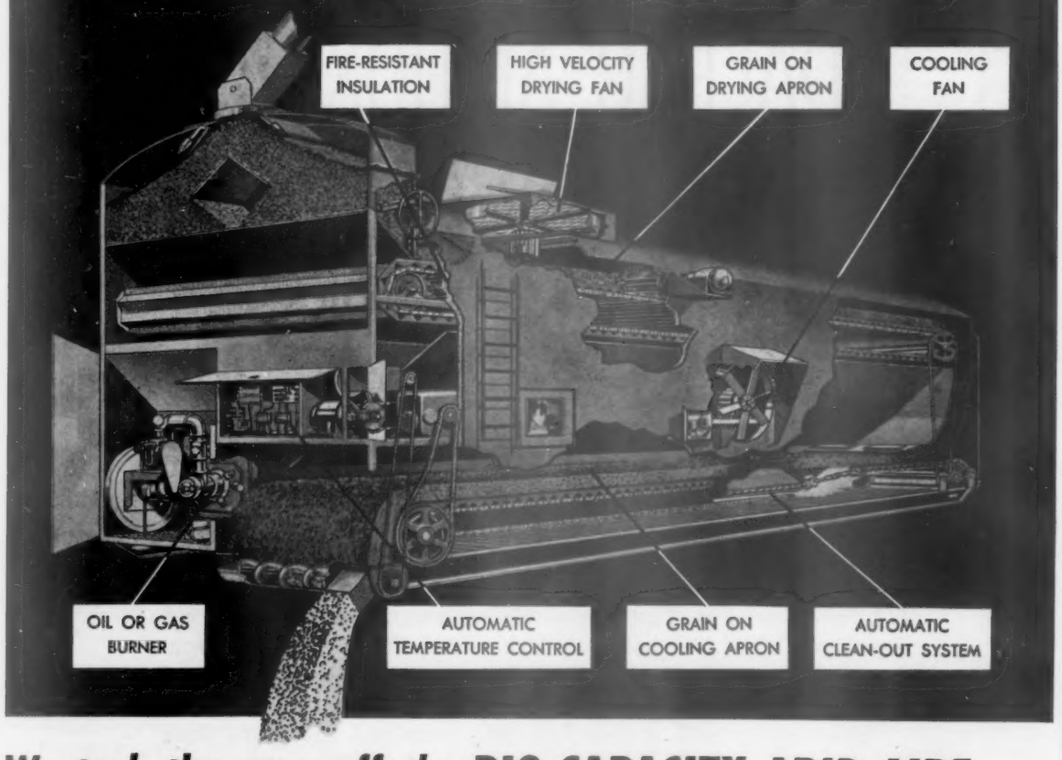
"Sounds fine to me," Joe said enthusiastically. "That will bring some farmers into my mill, and I ought to be able to sell them something else. But, wait a minute; how many tickets do you give out in a week?"

"Oh, it varies," Happy said. "Some-

(Continued on page 67)

An "Undercover Look" at

BIG CAPACITY



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Potential Turkey, Broiler Production Increases Indicated

WASHINGTON—Potential further increases in the turkey crop next year and in broiler production are indicated in a U.S. Department of Agriculture report on numbers of turkey and chicken breeders tested by official state agencies during October.

The number of heavy white breed turkeys tested for pullorum disease during October was 5% less than in the same month in 1955, but the number of other heavy breeds tested was 44% larger.

Heavy white breeds tested totaled 69,019 birds, compared with 72,875 in October last year. The number tested July through October totaled 221,469, compared with 161,170 during the same months last year—an increase of 37%.

Other heavy breeds tested during October totaled 447,505, compared with 311,272 a year earlier. The number tested July through October totaled 726,362, compared with 483,519 during same period a year earlier—an increase of 50%.

The number of light breed turkeys tested for pullorum disease during October was 49,957, up 6% from a year earlier. The number tested July through October was 175,808, up 2% from the same period of 1955.

In the 40 states for which comparisons are available, 2,895,819 chickens for supplying broiler hatching eggs were tested during October. This represents an increase of 34% from a year earlier. The number tested July through October was 8,272,131—an increase of 33%.

The number of chickens for other purposes tested for pullorum disease during October totaled 1,963,166, down 9% from a year ago. The number tested July through October totaled 3,754,927, which represents a decrease of 5%.

Support Eligibility Of Damaged Soybeans Relaxed by USDA

WASHINGTON—The U.S. Department of Agriculture has announced that price support requirements for 1956-crop soybeans have been relaxed because of weather damage through excessive rainfall, particularly in the coastal areas of North Carolina and Virginia.

The change in the 1956 program will permit putting under support soybeans of "sample" grade provided the total kernel damage is not in excess of 30%, the heat damage is not in excess of 3%, and the moisture content is not in excess of 14%. Discounts ranging from 4 to 59½¢ per bushel will be made for the various damage percentages. Premium for low moisture soybeans will not apply to "sample" grade.

Under normal circumstances, eligibility is limited to soybeans grading No. 4 or better with 14% or less moisture content.

The program revision announced will make it possible for farmers to hold soybeans damaged as a result of unusual weather conditions under price support loans or purchase agreements until marketing can be accomplished in an orderly manner.

Following is the schedule of discounts per bushel for damaged kernels:

8.1-9.0% kernel damage, 4¢ bu. discount; 9.1-10.0%, 5½¢; 10.1-11.0%, 7¢; 11.1-12.0%, 8½¢; 12.1-13%, 10½¢; 13.1-14.0%, 12½¢; 14.1-15.0%, 14½¢; 15.1-16.0%, 16½¢; 16.1-17.0%, 19¢; 17.1-18.0%, 21½¢; 18.1-19.0%, 24¢; 19.1-20.0%, 26½¢; 20.1-21.0%, 29½; 21.1-22.0%, 32½¢; 22.1-23.0%, 35½¢; 23.1-24.0%, 38½¢; 24.1-25.0%, 42¢; 25.1-26.0%, 45½¢; 26.1-27.0%, 49¢; 27.1-28.0%, 52½¢; 28.1-29.0%, 56¢; 29.1-30.0%, 59½¢; over 30%, not eligible.

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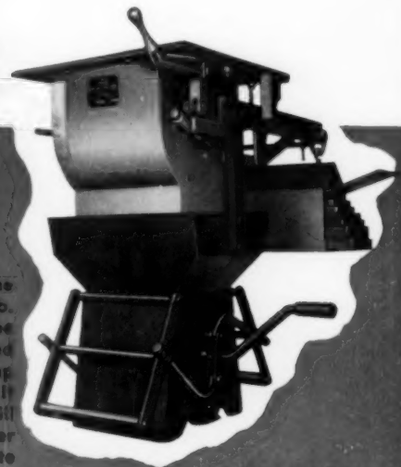
APEX BAGGING SCALE



Combines weighing and filling into one operation and handles 6 to 8 100 lb. bags a minute. Can be used for all free flowing materials including dairy feed with molasses. Adjustable bag clamp handles bags from 25 lb. to 200 lb. If you are bagging by hand the Apex will pay for itself—if you are using other equipment it will pay you to investigate the exclusive features on the Apex. Write for illustrated information.

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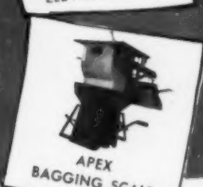
APEX BAGGING SCALE

BURROWS EQUIPMENT COMPANY

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"Hens lay more eggs, l

Some of the results of many trials at experiment stations and poultry farms

1 AUREOMYCIN increases egg production 6.5% in high producing layers

In a trial at *Texas A & M College* 200 White Leghorn hens were divided into two groups of 100 hens each. After a one-month adjustment period, production averaged 70% in both groups. The experiment was then started with one group receiving AUREOMYCIN at a level of 5 grams per ton of feed, the other at a level of 50 grams of AUREOMYCIN chlortetracycline per ton of feed. Over the next ten-month period, the group of hens receiving the higher level of AUREOMYCIN showed an average increase in egg production of 6.5% over that of the group receiving the lower level of AUREOMYCIN. Each dollar spent for AUREOMYCIN produced 53 extra eggs.

2 AUREOMYCIN brings hens out of laying slump, increases egg production 29%—hatchability 26%

In a trial in *Texas*, 6,000 New Hampshire pullets were divided into 4 pens of 1,500 birds each. Pullets reached 50% production at six months of age and continued at this rate for 3 months when the rate of production fell off sharply to 37%. AUREOMYCIN at the level of 200 grams per ton of feed was added to the ration in 2 pens for a period of 16 days. These two pens made a rapid recovery showing 29% increase in egg production over the 2 pens not receiving AUREOMYCIN during this 16-day period. This test also showed a 26% increase in hatchability from the feeding of AUREOMYCIN.

3 AUREOMYCIN increases early egg production, maintains late production at a higher level

In a 12-month trial in *Utah*, 600 White Leghorn hens were placed on a feed containing 100 grams of AUREOMYCIN chlortetracycline per ton with another 600 White Leghorn hens receiving no AUREOMYCIN supplementation used as controls. During the trial, extremely cold weather stressed the birds on several occasions. The hens receiving AUREOMYCIN showed an increased *early* egg production and maintained *late* production at a higher level than the hens receiving no AUREOMYCIN. Over a one-year production period, the controls averaged 54.4% production and those receiving AUREOMYCIN averaged 60.2% production. The 600 hens receiving AUREOMYCIN—at an approximate extra feed cost of $276—produced 1476 *more dozens* of eggs. With eggs selling at 35¢ per dozen, that means 517 more dollars, or an extra return over the cost of AUREOMYCIN of $241.

4 AUREOMYCIN increases egg production 18%, cuts feed costs 4½¢ per dozen eggs

In a 196-day trial in *Alabama*, one group of 837 New Hampshire breeding hens received no AUREOMYCIN in their feed. Another group of 525 hens received AUREOMYCIN at the level of 50 grams per ton of feed. The group of hens receiving AUREOMYCIN showed an increase of 18% in egg production over the controls, averaging 14 more eggs per hen for the 196-day period. Hens fed AUREOMYCIN required 1.3 pounds *less* feed to produce a dozen eggs. With feed costs at $80 per ton, this means a saving of 4½¢ per dozen eggs. Eggs from the group fed AUREOMYCIN averaged 5% more in weight.

5 AUREOMYCIN increases egg production 16.3% in the presence of CRD

In another trial in *Georgia*, 2,916 New Hampshire breeding hens showing clinical symptoms of chronic respiratory disease were divided into two groups. One group of higher-producing hens continued on the regular ration without AUREOMYCIN supplementation. The other group of lower-producing hens received AUREOMYCIN at the level of 100 grams per ton of feed. The group fed AUREOMYCIN started to improve immediately and, over the next 45 days, jumped from a per cent egg production 7.4 *below* that of the controls to a per cent egg production 8.9 *above* the controls—an improvement in per cent egg production of 16.3.

6 AUREOMYCIN increases egg production 18% in hot weather —produces 47 more eggs per 100 pounds of feed

In a 100-day trial at *Arizona College*, in temperatures up to 103 degrees the addition of AUREOMYCIN at a level of 50 grams per ton of feed to the ration of White Leghorns *increased egg production 18%* . . . and produced 47 more eggs per 100 pounds of feed. In another hot weather test of 112 days at Arizona, hens laying at the rate of only 27.7% but showing no symptoms of disease were placed on a ration containing 50 grams of AUREOMYCIN chlortetracycline per ton. This increased egg production 47%—produced 74 more eggs per 100 pounds of feed.

7 AUREOMYCIN increases egg production 39% in winter months in low producing hens

In a trial at *Iowa State College*, approximately 120 New Hampshire pullets were divided into 12 groups. These birds were fed, during a four-month period, a ration without AUREOMYCIN supplementation. During this period, the decline in egg production was unusually rapid. When AUREOMYCIN was added at a level of 100 grams per ton of feed to the rations of the 8 lowest-producing groups, egg production improved immediately. During the 60-day period following the incorporation of AUREOMYCIN in the feed, these 8 groups showed an average increase in egg production of 39%.

8 AUREOMYCIN maintains high egg production over a longer period, produces 13,000 more chicks per 1,000 hens

In a trial in *Georgia*, one group of 630 New Hampshire breeding hens was placed on feed containing AUREOMYCIN at the level of 100 grams per ton. Another group of 630 hens received no antibiotic supplementation. As growing pullets, both of these groups of birds had suffered from CRD. The level of 100 grams of AUREOMYCIN chlortetracycline led to an *increased early egg production* and was responsible for maintaining *late production at a higher level*. Over a 11-month period, the group of hens receiving AUREOMYCIN showed a *10% improvement in egg production over the controls*. Results also showed a 5.4% increase in hatchability of the eggs from hens fed AUREOMYCIN, resulting in 13,048 more chicks per 1,000 hens.

l onger, on less feed"

...that's your profit sales message when your layer and breeder feeds contain the **right** amount of the **right** antibiotic: Aureomycin

Many feed manufacturers *have been using* this sales message successfully for many months... and bringing EXTRA RETURNS to farm flock owners and to producers of market and hatching eggs.

The right amount of AUREOMYCIN in layer and breeder mashes provides all these *extras:*

1. More eggs over a longer period
2. More *early* and *late season* eggs
3. More eggs per 100 lbs. of feed
4. More eggs in presence of disease
5. More eggs in times of stress
6. More chicks from increased hatchability

Each and every one of these advantages has been proved in the Experiment Station and poultry farm trials described on the opposite page. These trials are a few of the many that have been made with AUREOMYCIN in layer and breeder feeds.

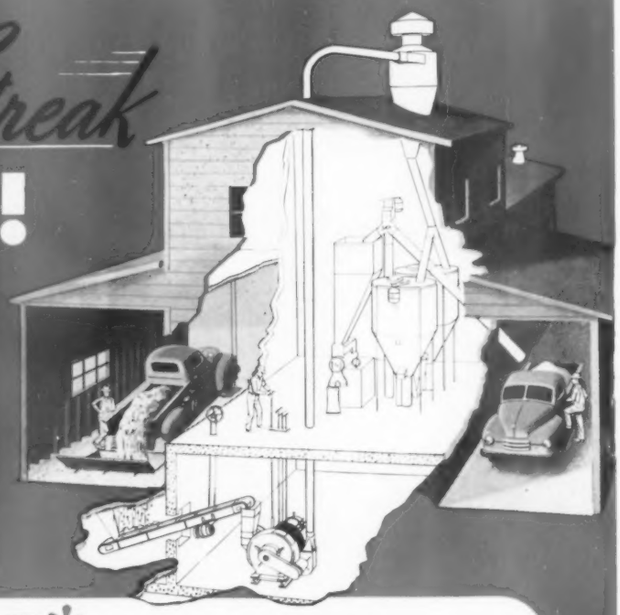
A special leaflet on AUREOMYCIN for layers is now available for use by feed manufacturers. Write for free supply. American Cyanamid Company, Animal Feed Dept., 30 Rockefeller Plaza, New York 20, New York.

CYANAMID

AUREOMYCIN® for more dollars, from more eggs

CHLORTETRACYCLINE

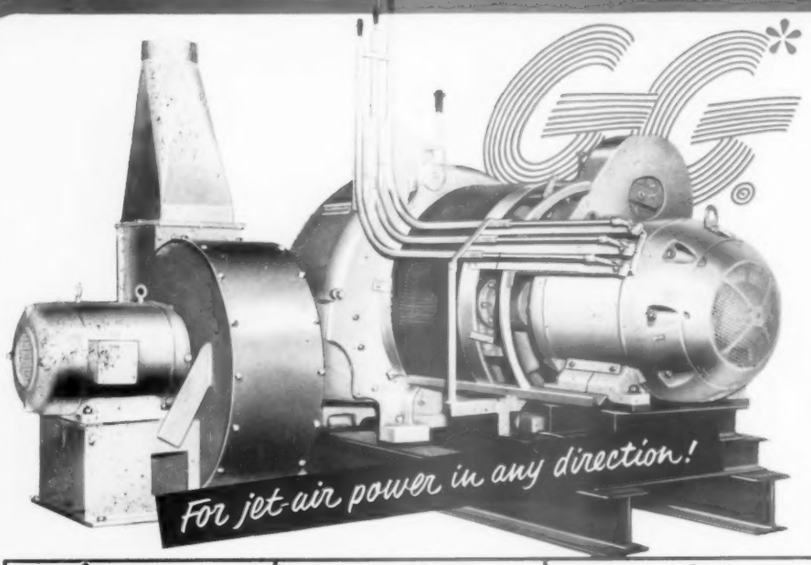
HERE IS *Blue Streak* AUTOMATION!



*GRANULAR GRIND *TWIN SPIRAL MIX

*In and Out of the Mill

Prater's one stop IN and OUT OF THE MILL operation is AUTOMATION. You can unload, grind, mix and reload in just a few brief minutes . . . and with any formula! Your customer loses a minimum amount of time. There's less time involved for both of you, less power used and a greater turnover in the number of feeder patrons you can service. This means more profits! This is truly FEED MILL AUTOMATION and Prater makes the most fully automatic feed machinery available for one stop service . . . it's BLUE STREAK AUTOMATION!



1ST REDUCTION Pro-sized particles are first produced in the crusher feeder . . . and these uniform particles are then steadily fed into mill for **2nd reduction.**

2ND REDUCTION Roll crushers crush and reduce uniformly the pro-sized particle then distribute evenly to the hammer section . . . for **uniform peripheral distribution and sizing.**

3RD REDUCTION Here granulation to a pre-determined size takes place. Final reduction hammers are sized to eliminate floury fines . . . and a selected screen does the rest. You get G.G.*

TRIPLE REDUCTION is the Only Key to *GRANULAR GRIND*

For a good feed formula, you must first have good grains and supplements—and a good mix, too . . . BUT! If the grind contains a lot of flour, the farmer is feeding expensive feed because his livestock and poultry can't digest the unpalatable fines! The farmer loses some of his feed budget and you may lose a good customer.

Blue Streak Granular Grind, which can be produced only with Prater's patented TRIPLE REDUCTION, is a grind without fines! This gives the feeder the maximum amount of nutritional value from his grains and supplements! Farmers know this and they seek out custom millers who are equipped with Prater Blue Streak Advance Custom Mills! Let one of our sales engineers show you more. And send for the booklet, "Granular Grind is Good Business!"

TWIN SPIRAL MIX*

For the Only PERFECT MIX!

Uniformity of mixing is now more important than ever! In addition to good grains, supplements and grinding, a more thorough mixing is required with today's high potency antibiotics and vitamins being injected into feed in the ratio of grams-to-the-ton. TSM — Twin Spiral Mixing—is one way of being sure! It's FORCE FLOW ACTION with two spirals . . . not just one. Insure UNIFORMITY . . . a perfect blend. Let a Prater Consultant show you why this is true. Or send for the book on Blue Streak Twin Spiral Mixer.

Here's Why!

These twin spirals toss and tumble the ingredients from one column to the other—it's mixing in every direction, not just a single spiral up and down motion. And this is a fast mechanical mixing in the steel housing. This is a patented Blue Streak feature.

THE ONLY MIXER OF ITS KIND IN AMERICA!

AUTOMATION
For the Nation's Mills
. . . . for more than
30 Years

BLUE STREAK Prater

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GMA

GRANULAR GRIND IS GOOD BUSINESS!

FREE!
These books on Mixing and Grinding

Prater Pulverizer Company
1537 S. 55th Court, Chicago 50, Illinois

Please send me the books I've checked — no obligation to me, of course!

- ☐ Granular Grind is Good Business!
- ☐ Blue Streak Twin Spiral Mixing
- ☐ The new Blue Streak Hay & Grain Grinder

Name_____

Address_____

City_____ State_____

JOE BROOKS

(Continued from page 62)

times 500, sometimes 1200, I never know."

"Well," Joe said ruefully, "I'd be willing to try that give-away idea for two weeks, and see how I come out. But what if somebody who isn't a farmer gets that salt block?"

"Well, about 90% of my customers are farmers," Happy said, "but if somebody gets a block who isn't a farmer, I'll give him a cup of coffee and a slice of cake free and charge it to you."

"Fair enough," Joe said. "I'll try it for a week. After all, I should make the acquaintance of some new customers through this deal."

"Wait a minute," put in Happy. "You get a sign in my restaurant, and in return I want a sign in your feed store advertising my restaurant."

Joe laughed. "That's fair, Happy. After all, we don't want this to be a one-way proposition. I'll put up your sign."

Happy looked very serious. "Joe, I am not trying to rook you on this deal. If you get one new customer, he may spend $1,000 or more with you in a year. If I get one new customer from the sign in your feed mill, I'll do well to get him to spend $10 here in one year. That's why, I don't feel too bad about you furnishing free salt for my restaurant tables and counter and giving away one block of salt with every 100 tickets to customers."

Same Goal

Once more Joe laughed. "Again that's good reasoning, Happy. And the main thing is that we are both trying to get more farm business and helping each other to get it. The farmer sometimes feels that he isn't welcomed anywhere in town, and we've got to work constantly on the idea that he is everyone's friend and equal."

"That's it," chimed in Happy. "The farmer can come in here and eat if he is in his old clothes, and he is still welcome. You can't say the same for some of the swanky places downtown. And the farmer is sensitive. He knows how each merchant feels. And that is why he doesn't buy from some of them."

Joe sipped the last of his coffee. "You are right, Happy. If the merchants of this town would only work together consistently to play up to the farmer, to get to know and appreciate him more, all of us would get much more farm business. Trade always goes where it is invited, and there's not enough inviting going on in this town, if you ask me."

"You and me do plenty of invitin' of the farmer, Joe. Ain't it the truth?"

Joe laughed. "Here, I'll pat you on the back, and then you pat my back. But let's not get big heads, Happy. We have to keep thinking and thinking about one thing—how to get more farm trade. If we don't, some other smart merchant is going to come along and take our bread and butter from us."

The salesman had finished his coffee and hamburger. As he paid his bill, he said admiringly, "Say, you fellows have your problems, too, haven't you? I'm not the only one who has it tough. So long, boys. It's a cruel world, if you don't keep working to keep up with progress. The guy who is ready to coast along—like I was this morning—will soon be looking for another job. Thanks for the lift in morale."

Early-Weaned Pigs' Protein Needs Tested

URBANA, ILL.—Early-weaned pigs need about 18% protein in their rations, according to the University of Illinois.

Dr. A. H. Jensen, animal scientist at the university, said that if pigs are weaned early, when they are from two to six weeks old, they will need a well balanced starter ration that contains 17-18% protein.

In a recent test Dr. Jensen weaned 180 pigs at 12-14 days old and put them on dry diets for eight weeks. He fed the pigs 10 different levels of protein from 10 to 32%. The pigs on the 18% protein did as well as those getting more protein and better than those getting less.

Turkey Research

CLEMSON, S.C.—Research on Leucocytozoan infection in turkeys, commonly known as "gnat fever," will be increased at the South Carolina Experiment Station in the next two years, according to O. B. Garrison, station director. A grant of $10,000 annually for the next two years has been made by Jeremiah Milbank of Cypress Woods Plantation at Ridgeland to aid in the study of this disease and its control in turkeys. The disease is caused by malaria-like organisms which are transmitted from infected carrier turkeys to young turkeys by black flies or gnats which breed in fresh water. Death losses as high as 5 to 8% have been reported in infected flocks.

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50% MEAT and BONE MEAL Provide:
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- 1.14 Times The Protein
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Stabilized ANIMAL FATS Provide:
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- More Efficient Use of Nutrients
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BOTH BRING MORE, BIG PROFITS!

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Laboratory Set Up to Handle Feed Processing Problems

A modern-day manufacturer or supplier of almost any product is likely to find that his morning mail yields something more than new orders and cheerful reports from salesmen. With fair frequency an earnest request for help in solving some problem involved in the use of the supplier's product shows up. The manufacturer or supplier then has to devote some time to a phase of his operations known as "customer service." His performance, he knows, in supplying the necessary help to his customer means a great deal to the future of his business. In fact, he is probably quite sure that when customers stop asking him for help they shortly may no longer be customers.

The manufacturer of feed processing machinery and equipment has as much opportunity to hear from his customers concerning their problems as any other type of manufacturer. In fact, he may hear more from them than some other manufacturers simply because of the nature of the feed business, which processes such a wide variety of products having different properties into a number of end-product forms.

Here's an example of a request concerning a customer problem that was received by a Minneapolis processing equipment manufacturing concern recently. And while it didn't come from the customer himself, but from a sales representative, it could be considered typical (names have been changed):

"Gentlemen:

"Brown Milling Co. is sending to you today via Crosscountry Truck Line samples of crumbles, 3/32 in. pellets and 5/32 in. pellets, for your analysis in recommending the proper sieve clothing for a replacement unit.

"Will you please be on the lookout for these, and may we hear from you as soon as you have come to some conclusions on this particular Power-Flo Separator problem.

Yours very truly,
Ernest Jones."

Such a request for help might be handled in a number of ways, but the recipient of the letter, the Strong-Scott Mfg. Co., believes that it has developed a new systematic procedure and facilities for handling such problems that are unique in the feed field.

Customer Service Laboratory

Within the past two months the 59-year-old company has established a "customer service laboratory" which is designed to give feed processors the greatest possible assistance in solving their feed grinding, mixing and separating problems.

Located in the company's plant at 451 Taft Street, Minneapolis, the laboratory is in a rectangular-shaped room about 35 by 45 ft. In it is installed the following processing equipment: Hammermill, attrition mill, air attrition impact pulverizer and classifier (called by the trade name, Pulvocron), separator, horizontal batch mixer and a portable molasses mixer, all manufactured by the Strong-Scott company. In addition, a dust collector manufactured by the Day Co., Minneapolis, is part of the equipment. In the process of being installed are a continuous dry-wet mixer and unit pulverizer, both part of the company's line of equipment.

Brightly painted walls and floor give the room a typical research laboratory appearance. Laboratory tests are supervised by John Zesbaugh, who is the engineer-in-charge, and Roy LaBelle, laboratory technician.

While Mr. Zesbaugh and Mr. LaBelle are actively concerned with the laboratory's operation, the new service is being closely coordinated with other company departments.

J. Thomas Haigh, director of marketing, feels that the laboratory will help get the utmost performance and flexibility out of processing equipment and thus improve the mill operator's plant efficiency. The laboratory, he says, is able to test and check equipment and operations, using variable procedures, in a manner which the mill owner would be unable to do. He cites the successful experiences which supplier firms in other industries have had with similar laboratory setups.

The firm's service engineering department, managed by A. J. Bury, is making use of the laboratory. Service problems reported from the field can be simulated in the laboratory and observed first hand, simplifying the job of resolving the problems.

Operation of the laboratory is being coordinated with the sales department. During its recent conference the sales staff was thoroughly acquainted with the lab's physical setup and told of its availability to both customers and non-customers. R. W. Fredrikson, manager of field sales, and O. K. Fredrikson, manager of contractor sales, pointed out the assistance the lab is able to provide in helping a customer decide which processing procedures are most economical and efficient.

Procedure for Use

Customers are asked to secure a test form from the company, fill it out and send it to the company's Minneapolis headquarters along with material to be tested, appropriately labeled. Laboratory personnel then analyze the problem, outline a testing procedure and conduct the tests.

The result? It's illustrated by the follow-up of the "Brown Milling Co." request, cited above. A complete report of the test was sent to the inquirer. It included an analysis of the product sent for testing, a description of the test procedure and the following recommendation: "With the crumbles and pellets it is felt that a top screen of 6 mesh would split the stream more evenly and give better results . . . it seems reasonable to assume that all three products could be run over a No. 6 mesh tin mill screen and 5/64 in. round perforated metal screen."

Further explanation of capacity calculations was supplied in a covering letter.

When possible, Strong-Scott officials prefer to have the feed processor personally watch the tests so that he can see the results first hand.

It is anticipated that as new feed ingredients and new applications develop, feed production problems will become more complex. The laboratory testing procedure, Strong-Scott officials believe, will prove to be an increasingly useful tool in meeting these problems.

Feed Firms Approved For Business Loans

WASHINGTON — Included in the list of firms which has been approved for loans by the Small Business Administration are the following:

Baker's Hatchery, Danville, Ark.; C. C. Stafford Milling & Warehouse Co., Inc., Puente, Cal.; Aqua Linda Feeders, Inc., Amada, Ariz.; J. A. McCarty Seed Co., Evansville, Ind.; Kling Seed Co., Cedar Rapids, Iowa; Taylor Feed Co., Albertville, Ala.; Tateco Mills, Inc., Senatobia, Miss.; Showalter Bros., South Hutchinson, Kansas; Oswald Produce Co., Chappell, Neb.; Hopkins Produce, Neligh, Neb.; Farmcraft Seed Co., Inc., Lafayette, Ind.; Don Smith, Inc., Albion, Ind.; Dwiggins Alfalfa Mills, Inc., New Paris, Ind.; Diamond Hatchery, Knightstown, Ind.; and Mansfield (Ohio) Feed Store.

FEED STORE FOUNDER DIES

LOUISVILLE—George W. Weaver, Sr., founder of the St. Matthews Feed & Seed Store, Louisville, died here at the age of 78 years. He retired several years ago.

make an extra 10¢ per dozen
MARKETING EGGS
Price local Egg Producers are getting for their Grade "A" large eggs..... 44¢
We can pay Egg Producers a BONUS per dozen of..... 2¢
Add for cost of cartons. 2¢
Add for advertising..... 1¢
Add for lease cost for FRESH EGG MERCHANDISER... 1¢
Pay Food Store for SELLING OUR EGGS..... 6¢
Add for OUR WORK of Grading, Candling and OUR PROFIT..... 10¢
Set retail price of our eggs at.... 66¢
Feed Dealers and Hatcherymen can make big money marketing QUALITY EGGS for nearby Egg Producers. Just loan Food Store a FRESH EGG MERCHANDISER and pay them 6¢ dozen for selling your eggs. You set retail price and make 10¢ dozen for your work (See above). Lease Case with no investment. Write for facts today. TOBIAS ENTERPRISES. 225 North Michigan Ave., Chicago 1, Illinois
Lease for FOR ONLY $24.00 PER MONTH
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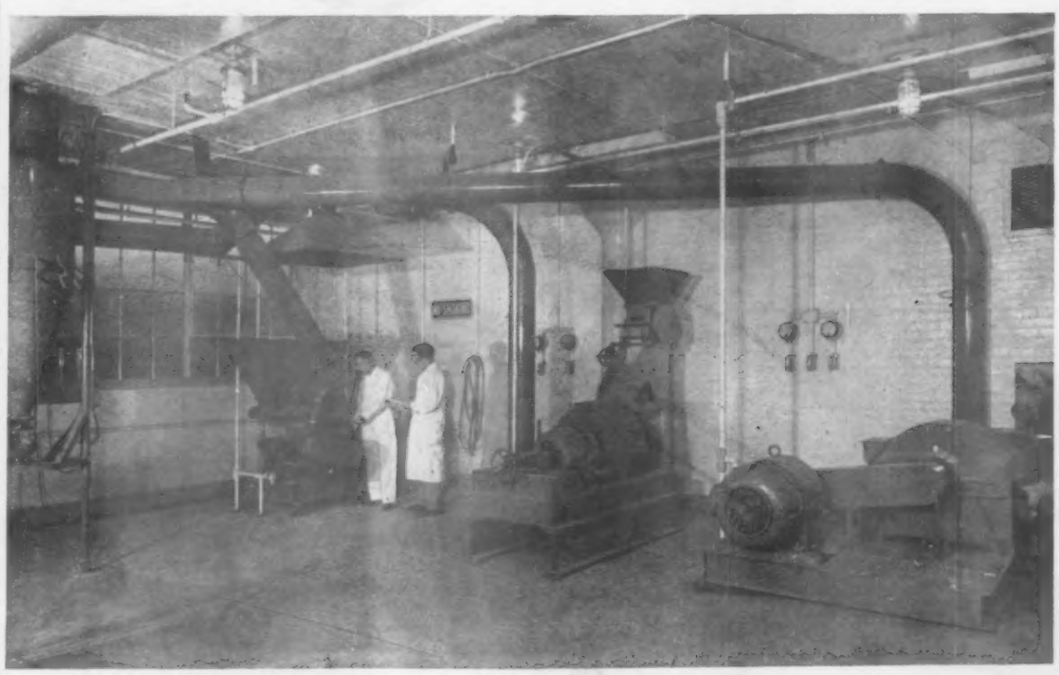

LABORATORY VIEW—A section of the new customer service laboratory of the Strong-Scott Manufacturing Co., Minneapolis, is seen in the above picture. Facilities of the laboratory are used to study and help solve problems of feed processors who furnish samples of the material to be tested to Strong-Scott. Results of the laboratory findings are then made available to the feed processor. Equipment shown in this section of the laboratory includes, from the left: Dust collector, air attrition impact mill, attrition mill and hammermill. Making a record of the test being conducted is John Zesbaugh (right), laboratory engineer, who is being assisted by Roy LaBelle, laboratory technician.

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TRACE-MINERAL PRE-MIXES
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Write for a free reprint of the chapter on "Energy Values of Feedstuffs for Poultry" from "The Scientific Feeding of Chickens" by Dr. Harry W. Titus.

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Kansas Reports Research On How Antibiotics Function

MANHATTAN, KANSAS — Scientists at Kansas State College have reported new research findings on the way in which antibiotics work in an animal to promote growth.

The college says that the results of the basic research by Dr. Jean Radisson, Dr. Erle Bartley and coworkers may make the use of antibiotics in livestock feeds more effective and efficient in the future.

The K-State scientists said they discovered that small quantities of Aureomycin, instead of eliminating bacteria and disease-producing organisms in calves, make the bacteria more susceptible to destruction by the calves' white blood corpuscles.

Scientists, in their search for the mode of action of antibiotics, have failed to find relationships between growth-promoting action of antibiotics and changes in numbers and types of intestinal disease germs in digestive tracts of livestock. The K-State research indicates that at least a part of the effect of antibiotics on growth is due to their effect on the physiology of bacteria, rather than on the numbers and types of intestinal bacteria, in such a manner as to make them more susceptible to the defense mechanisms of the animal body.

"If the K-State discovery proves correct, as the research indicated, both human and animal nutritionists will know not only that antibiotics frequently result in better health and/or better gains, but also how this is accomplished," the college says.

"Knowing why and how antibiotics function will help nutritionists make accurate recommendations on their use."

The research explains, for example, why dairy calves are aided most by antibiotics in early life when their defense mechanisms are not fully developed and they are most susceptible to intestinal disturbances.

A. E. Staley Company Praised for Service

DECATUR, ILL.—The A. E. Staley Manufacturing Co. was praised as "Decatur's No. 1 citizen" at a recent Association of Commerce meeting here. The tribute came during the 50th anniversary of the company's founding.

A. E. Staley, Jr., president of the Staley company, cut the birthday cake during the Decatur association's ceremony honoring the firm.

F. M. Lindsay, president, Lindsay-Schaub Newspapers, an intimate friend of the late A. E. Staley, Sr., was the main speaker at the fete and called the firm's founder a man whose characteristics included simplicity and honesty and who had "absolutely remarkable vision."

Especially cited were the firm's contributions to Decatur's parks, playgrounds, hospitals, churches and many other community projects and organizations.

"I know you're giving me an honest day's work but you're getting a week's pay for it."

Pfizer Offers Lysine For Human Nutrition

NEW YORK—Chas. Pfizer & Co., Inc., announced recently that it has acquired exclusive rights to U.S. Patent No. 2,771,396 covering a process for manufacturing L-lysine by fermentation.

This process represents a significant breakthrough in biochemical engineering, the company said. The patent lists the inventor of the process as Dr. L. E. Casida, Jr., of Pfizer's biochemical research laboratories.

A previous Pfizer announcement told of the commercial availability of the lysine product for use in human nutrition. L-lysine monohydrochloride, the form in which the amino acid will be marketed, will be priced at $12 lb. in 50-lb. lots to $14 lb. in 1-lb. lots.

Dean and Alan Dungan, partners in Farmers Certified Mills Company, Lawler, Iowa wrote that their Bryant Double-Duty Hammermill gives:

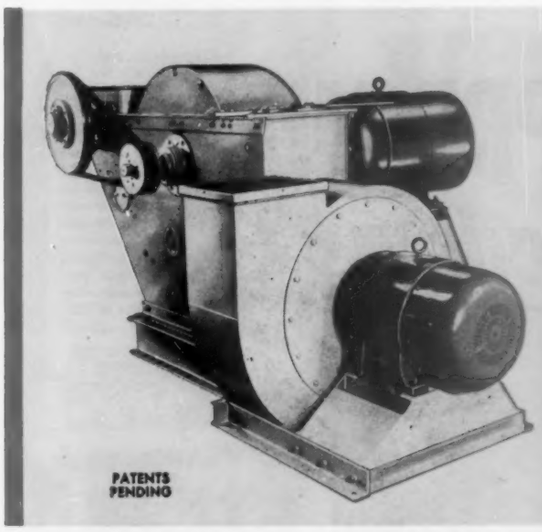
"greater capacity - trouble free grinding low cost maintenance - power savings."

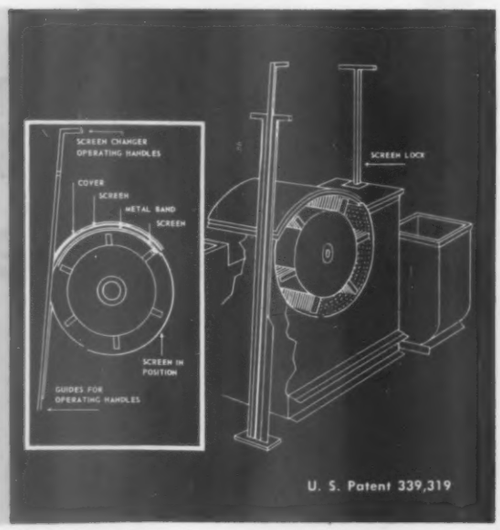
They also said, "These facts are why we bought another Bryant Double-Duty for a new mill we just completed."

INSTANT SCREEN CHANGE

is just one of the facts the brothers Dungan of Lawler, Iowa liked about their Bryant Double-Duty.

The Bryant Simplex Screen Changer lets you change to any one of three screens from the work floor without stopping the mill. There is never any feed leakage—the screen enters from top of the mill, slides freely into grinding position and is locked securely by the exclusive Bryant screen lock. You can insert an extra screen manually in less than 30 seconds without loosening bolts or using any tools.





IF YOU WANT THE SAME COMPETITIVE ADVANTAGES DEAN AND ALAN DUNGAN HAVE, WRITE US FOR THE COMPLETE BRYANT DOUBLE-DUTY STORY.

Diagram above shows operation of the Bryant Simplex Screen Changer

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THE LEADING DRY STABILIZED "Sealed-In" VITAMIN A PRODUCT

*U.S. Patent No. 2496634 Reg. Trade Mark

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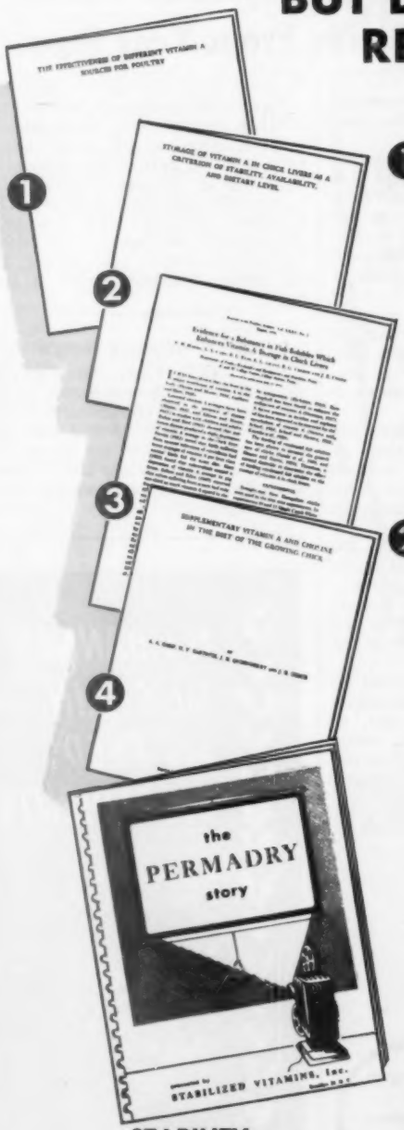

1 POULTRY SCIENCE Vol. 34 No. 4, 1955
Excerpts from a paper entitled:

THE EFFECTIVENESS OF DIFFERENT VITAMIN A SOURCES FOR POULTRY

"Chicks receiving their vitamin A from the dry carrier‡ made significantly greater gains to ten weeks of age, had better efficiency, higher liver storage of the vitamin and lower mortality than those receiving their vitamin A from fish oil. * * * It was found that the dry carrier‡ permitted a consistently higher rate of egg production than the fish oil. * * * When placed on a vitamin A deficient diet, it was observed that the chicks from the hens receiving the dry carrier‡ had a longer survival period than those from the hens receiving the fish oil."

2 POULTRY SCIENCE Vol. 34 No. 5, 1955
Excerpts from a paper entitled:

STORAGE OF VITAMIN A IN CHICK LIVERS AS A CRITERION OF STABILITY, AVAILABILITY, AND DIETARY LEVEL

"It is apparent from these data that the vitamin A content of the liver is useful criterion in determining the stability, availability and utilization of vitamin A from different products available to the feed industry. * * * The addition of 2,000 I.U. of vitamin A from the stabilized concentrate‡ produced a higher liver storage of the vitamin than did 4,000 I.U. of vitamin A per pound from fish oil when the diets were stored at room temperature. * * * There is an indication to the effect that the use of the stabilized vitamin A concentrate‡ in the feed produced birds that were heavier at the completion of the experiment than were those fed fish oil as a source of the vitamin."

3 POULTRY SCIENCE Vol. 35 No. 2, 1956
Excerpts from a paper entitled:

EVIDENCE FOR A SUBSTANCE IN FISH SOLUBLES WHICH ENHANCES VITAMIN A STORAGE IN CHICK LIVERS

"Fish solubles addition to the diet in the presence of 2,000 I.U. of vitamin A from the stabilized supplement‡ per pound of feed increased the liver vitamin A storage."

Experiment Number	I.U. Vitamin A added per lb. of feed	Source	Supplements to basal diet	Liver vitamin A content, I.U.
1 (6-19-53)[1]	2,000	F.O.[2]	None	55.6
	2,000	F.O.[2]	F.S.[4]	217.3
	2,000	S.A.[3]	None	279.4
	2,000	S.A.[3]	F.S.[4]	1282.0

[1]Beginning date of experiment. [2]Fish oil concentrate.
[3]Stabilized vitamin A concentrate. [4]3% condensed fish solubles.
‡Identified as PERMADRY in each Publication

4 POULTRY SCIENCE Vol. 34 No. 5, 1955
Excerpt from a paper entitled:

SUPPLEMENTARY VITAMIN A AND CHOLINE IN THE DIET OF THE GROWING CHICK

"The substitution of 2,000 I.U. per pound of feed of vitamin A as a dry stabilized vitamin A supplement‡ and 2½% of ground milo for 2½% dehydrated alfalfa meal (equivalent to 2,300 I.U. vitamin A activity per pound of feed) resulted in a highly significant increase in growth rate and an improvement in feed conversion."

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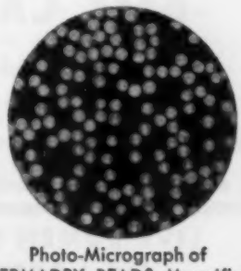

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BAG SALESMEN CONFER — Raymond Bag Corp. and Albemarle Paper Mfg. Co. are now joined, and the sales personnel of both conferred about mutual problems at a recent meeting. Pictured are, from the left, S. G. Shetter, T. B. Athey, R. W. Drury and D. F. Wicks, district sales managers; T. H. Bacon, assistant sales manager, and J. R. Clements, vice president of Raymond Bag. Mr. Bacon is demonstrating Raymond's new "Raylox" valve.

Number of Potential Layers on Farms Shows Little Change From Year Ago

WASHINGTON — It looks as though the nation's laying flock will start off 1957 at close to the same size as a year earlier.

The number of potential layers (hens and pullets of laying age plus pullets not of laying age) on farms on Nov. 1, amounted to about 383 million, according to the U.S. Department of Agriculture's latest crop report. This represented a decrease of 1% from a year ago.

A similar relationship to a year earlier is expected to continue in layer numbers through the first part of 1957. With a higher rate of lay, egg output may be a little above a year earlier.

The USDA figures on potential layers Nov. 1 showed variations in different regions, but most sections showed at least some decrease from a year ago. Holdings were smaller in all parts of the country except the east north central and south Atlantic states, where they were about the same. Decreases from a year ago were 1% in the west north central and south central states, 2% in the north Atlantic region and 3% in the West.

The number of layers on hand on Nov. 1 totaled 329 million, compared with 328 million a year earlier, as pullets have been moved into laying flocks earlier this year. Pullets not of laying age on Nov. 1 totaled about 53 million, 9% less than a year ago.

During the month of October, the nation's laying flock averaged 323 million layers, or 1% more than a year ago. The rate of egg production per layer in October was 14.9 eggs, a new high rate for the month. This compares with 14.4 eggs last year. Total egg production for the month was up 4% from a year earlier, and egg prices continued below a year ago.

MILK OUTPUT DOWN

PORTLAND, ORE.—Oregon's October milk output, estimated by the U.S. Department of Agriculture, was 91 million pounds, 5% below last year's production and the lowest output for the month since 1932. The nation's October output was 2% above a year ago.

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Resolutions Passed At Western Grain, Feed Assn. Meeting

DES MOINES, IOWA—Among the resolutions passed during the Western Grain & Feed Assn.'s 57th annual meeting at Des Moines, Iowa, were the following:

Whereas the U.S. Department of Agriculture has taken initial steps toward elimination of competition with private trade in the assembly, sale and distribution of grain and feed, now, therefore, be it resolved that we strongly urge that USDA extend and broaden such policies, and that future plans include full and equitable use of all the established channels of the grain and feed trade in the sale, distribution and reconcentration of government supplies of grain. We specifically urge that all USDA policies be normal and customary in the trade.

We recommend further that the future plans of officers of the Western Grain & Feed Assn. be directed to include sincere cooperation with USDA in attempts to take the government out of any and all competition with the private grain and feed trade, while at the same time seek basic legislation from Congress toward the same end.

Whereas the grain and feed trade is conducted on extremely moderate margins, be it hereby resolved that any distinction for the purposes of taxation between competitors in the grain and feed trade become a marked advantage or disadvantage, therefore, consistent with resolutions of past years, we urge that the association and its members put forth renewed and ceaseless effort toward removing this federal tax inequality.

This association will continue to cooperate wholeheartedly with the Food & Drug Administration to improve sanitation conditions under which grain is received and handled.

We therefore resolve that we will continue to wage a campaign for better housekeeping in our grain elevators and at the same time call upon the agencies of USDA, the state college, the Fish and Wildlife Service and producers of grain to join us in a continuing program of education and research aimed toward the improved sanitation of our grain stocks.

Labor Act Extension Opposed

This association vigorously opposes the extension of coverage of the Fair Labor Standards Act to employees of the grain and feed industry who are now exempt and further urges definition of the "area of production" exemption to include the area from which grains are assembled from producers.

Whereas the Commodity Credit Corp. has been offered an outline of a plan designed to prevent ownership and possession of grain by that government corporation, and whereas this plan is essential to the life of our trade if the Congress does not provide legislation to enable the marketing of grain through the free markets at free market prices; therefore, be it resolved that we direct the officers and staff of this association to press for adoption of the proposal submitted in the absence of legislation in 1957 that will free our markets from the burden of business competition by our government.

We recommend that in disposition and disposal of government-owned grain (corn stored in either government bin sites or commercial storage), that such grain should first be taken from government bin sites.

Tax Proposals

The Western Grain & Feed Assn. endorses the recommendation of the cabinet committee on small business on the following proposals: (a) That the taxes imposed on business corporations be modified by reducing the tax rate from 30% to 20% on income up to $25,000; (b) that business be given the right to utilize, for purchases of used property not exceeding $50,000, in any one year, the formula of accelerated depreciation that was made available to purchasers of new property by the Internal Revenue Code of 1954; (c) that rapid amortization privileges on grain storage facilities be extended; (d) that corporations with, say, 10 or fewer stockholders be given the option of being taxed as if they were partnerships; (e) that the taxpayers be given the option of paying the estate tax over a period up to 10 years in cases where the estate consists largely of investments in closely held business concerns.

Rail Rate Increase Opposed

Whereas the rail carriers of the U.S. have released publicly, information indicating that they will shortly request authority from the Interstate Commerce Commission to again apply percentage increases in rail rates and whereas such increases would, if applied on grain products, further divert the movement of grain from rail to trucks and whereas merchandising of grain by trucks would further tend towards by-passing existing marketing channels and disrupt the orderly marketing of grain and whereas many rail carriers in various areas are now recognizing that rate levels presently applicable on grains are precluding rail movement; therefore be it resolved that this association be recorded in opposition to the application to grain and grain products of any contemplated rate increase and that this association point out to rail executives that any such increase would be contrary to their own best interests as well as to those of our industry.

Be it resolved that this association renew its recommendation that the Iowa state legislature change the feed tonnage tax laws so that the money collected be spent only in the regulation of feed inspection and that any excess funds be made available to the Iowa State College for purposes of furthering education and experimental nutritional work by poultry and livestock departments.

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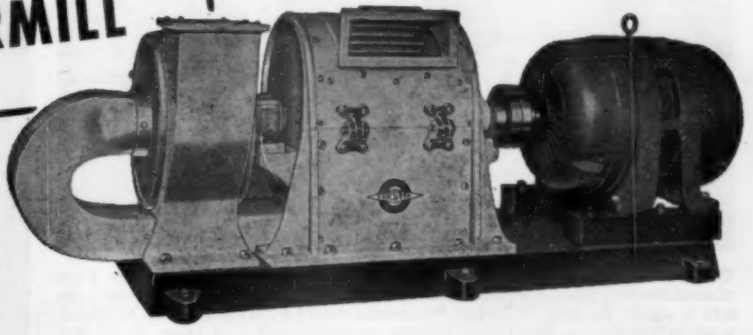

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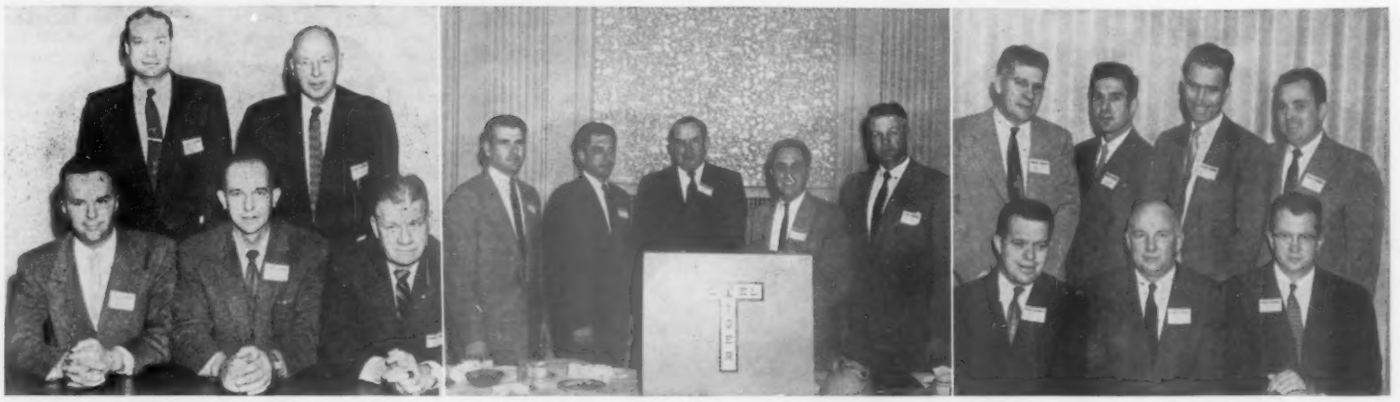
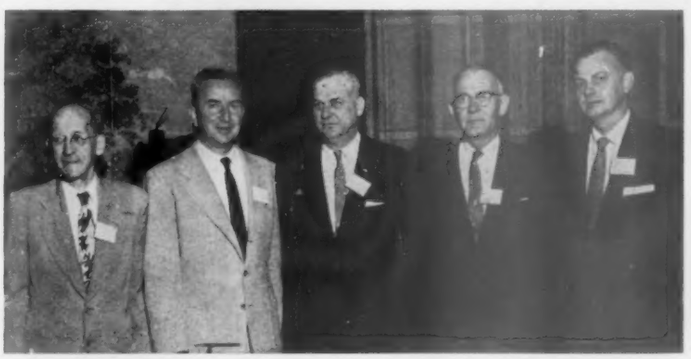


MISSOURI MEETING HIGHLIGHTS—Among the persons who took leading parts in the Missouri Feed Conference are those pictured in the three-picture panel above. Problems of disease control through medicated feeds was the subject examined by the group at the left. Standing, from the left: Dr. Dennis D. Goetsch, Specifide, Inc., Indianapolis; Dr. R. C. Klussendorf, Commercial Solvents Corp., Terre Haute, Ind.; seated, from the left: Morton C. Craig, sales representative for Hales & Hunter Co., Boonville, Mo.; Dr. J. C. McCrea, veterinarian, Platte City, Mo., and Dr. C. D. Lee, extension veterinarian, Iowa State College, Ames. Active in planning the conference were the men in the center picture, from the left: Dr. W. H. Pfander, animal husbandry department, University of Missouri; A. Earl Straub, Missouri feed control official, Jefferson City; Oscar Straube, Pay Way Feed Mills, Inc., Kansas City, and board chairman of the American Feed Manufacturers Assn.; Maxwell Cooley, Hoffman-Taff, Inc., Springfield, committee member from the Midwest Feed Manufacturers Assn., and D. A. Meinershagen, Eagle Mill & Elevator Co., Higginsville, secretary of the Missouri Grain, Feed & Seed Assn. Some of those who appeared on the program are shown in the picture at the right. Front row, from the left: Dr. D. E. Brady, animal husbandry department, University of Missouri; Dr. W. M. Beeson, animal husbandry department, Purdue University; Dr. C. B. Knodt, Larro Research Farms, General Mills, Inc., Indianola, Iowa. Four members of the University of Missouri staff are in the back row, from the left: Dr. M. E. Muhrer, agricultural chemistry department; S. Zobrisky, animal husbandry department; Dr. L. F. Tribble, animal husbandry department; and A. M. Mullins, animal husbandry department.

Camera Views of the News



TENNESSEE OFFICERS—New officers and directors of the Tennessee Feed Manufacturers Assn., elected at the recent annual meeting in Nashville, are left to right: Wendell H. Levine, Nashville, secretary-treasurer; M. E. Staed, Ralston Purina Co., Nashville, retiring president and a director; Q. D. Edmonds, Model Mill Co., Jackson, new president; D. Bibb Gambill, Barry-Carter Milling Co., Lebanon, director; W. D. Hudson, Cumberland Milling Co., Clarksville. Other new directors not present when the picture was taken are: Henry C. Tilford, Jr., Dixie Grain Co., Shelbyville; G. P. Moseley, Quaker Oats Co., Memphis; Turner Whitworth, Nutrena Mills, Memphis; and R. W. Fay, McMillen Feed Mills, Memphis.

NEW FACILITIES—Here is a view of the new facilities of the Southern States Lynchburg Cooperative at Lynchburg, Va. A formal opening was held recently, with more than 800 persons present for the event. The building, land and equipment, including rail siding, cost approximately $80,000. Machinery includes a truck hoist, hammermill, suspended hopper scales, 2-ton mixers and molasses blender. John J. Rush is manager of this cooperative, which was established in September, 1954. Officials of the organization say the plant represents the most modern facilities in the area.

FEED MILL FIRE—The mill building and an elevator were destroyed and a warehouse was damaged in this explosion and fire in the Ralston Purina Co. feed plant at Amarillo, Texas, Nov. 20. The loss, virtually fully covered by insurance, was estimated at $500,000. The explosion, cause of which was not immediately determined, occurred in the elevator. Two persons working in the warehouse area at the time were burned, but their condition was reported good the following day. In the above picture, the top of the mill is seen toppling to the ground. (Wide World Photo)

The Effect of Milk Products on Eating Quality of Broilers

By Dr. S. M. Weisberg

EDITOR'S NOTE: Some recent "taste panel" tests of poultry fed different rations were reported at the Texas Nutrition Conference by Dr. Weisberg, who is affiliated with the National Dairy Research Laboratories, Inc., Oakdale, Long Island, New York. Preliminary results, he said, indicate that the eating quality of poultry is improved when the basal ration is supplemented with a milk product. How this conclusion was reached is described in the accompanying article, which is a summary of his Texas talk.

The subject of poultry eating quality is beginning to receive serious attention, for it is realized that the expansion of the broiler industry depends in large measure on how well poultry meat is accepted by the consumer in competition with beef, lamb and pork products. There has been some feeling that the mass production of broilers employing modern high energy rations may have been accompanied by flavor loss. The detection of off flavors in poultry is relatively simple and it has, for example, been long established that certain fish oils or fish products may impart a fishy flavor to poultry. However, the measurement of flavor increase or decrease is much more difficult and has received relatively less attention. Moreover, very little is established about the basic flavor ingredients in poultry.

Pippen (1) reported that chicken fat is a minor source of flavor in poultry, but that poultry meat was a major source, and that even cold water readily extracts important flavor precursors. Lineweaver (2) reported for his associates that in chicken broth a mineral fraction is present that contributes a salt-like flavor and that numerous amino acids are present. Volatile flavor components are also present, originating perhaps from the fat. Maw (3) reported a few observations on the relationship of feed to eating quality of poultry and noted corn fed poultry as being the most flavorful and moist, with barley second, oats third, and wheat last.

Our interest was in studying the effect of milk product supplementation for poultry rations upon the eating quality of broilers and other poultry. It has been our practical experience over a 25-year period that poultry fed milk supplements, evidence superior eating qualities. However, the numerical measurement of these differences is a challenging problem. In this paper we are reporting the results obtained from several hundred trials with a trained taste panel.

Evaluation Procedure

After consideration of the existing literature, discussion with other workers in this field and preliminary tests, the following procedure was developed for determining the eating quality of broilers.

Eviscerated poultry that had been previously frozen at —5° F. were allowed to thaw at 40° F. for 24 hours. Birds were then cut into the following seven pieces: Two legs, two wings, lower back and tail, whole breast, and upper back and neck. To each 2.5 lb. of chicken, the following were added: 3,000 ml. water and one tablespoon table salt. No other seasoning was added. This combination was then brought to a boil in a stainless steel vessel and allowed to simmer for one and one half hours. Bones and skin were removed and remaining meat and broth brought to a boil again before serving.

A 6 oz. portion of broth and meat was served hot in a standard soup bowl to the evaluation panel members who were located in isolated booths. Two coded samples were served to each member of the panel —one sample with poultry fed milk by-products and another sample as a control with no milk supplement added.

A numerical scoring system was developed which permitted us to make comparisons between the various treatments. This system assigned numerical values (1) to the flavorfulness of the broth, (2) to the flavorfulness of the meat, (3) to the tenderness of the meat.

Our evaluation panel consisted of 10 (seven male, three female) who were selected from a much larger

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group on the basis of their ability to differentiate between samples. This panel was repeatedly tested with identical samples to measure their critical ability, and each type of poultry was evaluated at least four times. Experience taught us that best results were obtained when only two samples were presented to the panel at one time. The studies have been in progress for 10 months and appear to support the following observations and conclusions.

Observations

Poultry fed milk products were more tender in the uncooked state, as evidenced by the relative ease of cutting them up. Very little visible fat was seen in milk fed broilers as compared to controls.

After cooking, the milk product fed poultry had very tender skin and meat as compared to their controls. The fat was usually emulsificd throughout the broth and the broth was cloudy; the broth from the control birds was usually clear, and the fat rose to the surface in fairly large globules. The broth from the broilers fed milk products was more flavorful and the meat was more flavorful and tenderer than that of the controls.

The eating quality of poultry fed modern corn-soybean meal type rations was consistently improved by milk product supplementation over the range of 1.5 to 5% milk product solids; there were indications that this effect is increased as the percentage of milk product solids is increased. It was also found that supplementing excellent, widely-used commercial broiler feeds with milk products led to significant improvement in the eating quality of the poultry.

The addition of high levels of known vitamins to a corn-soya basal ration appeared to give a slight improvement in the eating quality of the broilers, but it is doubtful whether this will prove statistically significant.

Setting the controls at 100%, the following typical comparative values were obtained with various types of basal rations and milk supplements.

Comparative Eating Quality of Poultry Fed Milk Product Supplements

Corn-soya control (C-S-C)	100
C-S-C + known vitamins	106
Corn-soya control (C-S-C)	100
C-S-C + dry milk product fortifier No. 2	124
Commercial mash (L)	100
L + milk product fortifier, No. 2	129
Corn-soya control (C-S-C)	100
C-S-C + milk product moist block	120
Commercial mash (Q)	100
Q + milk product moist block...	140
Commercial mash (C)	100
C + milk product moist block ..	115
Corn-soya control (C-S-C)	100
C-S-C + fluid milk product mixture	118
Corn-soya control (C-S-C)	100
C-S-C + dry milk product fortifier 2M	129
Corn-soya control (C-S-C)	100
C-S-C + fluid milk product mixture	116

The milk products usually consisted of whey, hydrolyzed whey, fermentation whey solubles and buttermilk. A statistical analysis of the data so far obtained indicated a 5% level of significance.

We have sought some explanation for the favorable effects of milk products. A uniform fat distribution throughout the carcass seems clearly indicated with milk supplementation, and no doubt this plays some part. However, it is our surmise that more deep-seated changes result from milk feedings, and we have tried to approach this problem through paper chromatography studies of the chicken broth.

Composition of Chicken Broth

A start has been made on determining the amino acid and carbohydrate composition of the chicken broths prepared in the manner described. The following amino acids have been found occurring in the free state in the various broth samples — aspartic acid, glutamic acid, serine, glycine, threonine, alanine, tyrosine, histidine, valine, methionine, lysine, arginine, proline, isoleucine, and leucine. Unidentified substances reacting with the ninhydrin reagent are also present.

As many as nine carbohydrate spots have been found using ammoniacal silver nitrate. Among the sugars present, glucose, sucrose, and ribose have been identified.

It is evident that the flavor of chicken broth is a very complex one related, among other things, to the amino acid and carbohydrate content present, as well as to the probable interaction of these components. We have found no evidence that chicken fat makes a major contribution to the flavor of the broth, though it does affect the "feel" of the broth upon tasting.

With respect to detailed differences between the broth obtained from milk fed and non-milk fed poultry there are indications of differences relating both to the nature of the basal ration and to the presence or absence of milk supplementation. These differences may be both qualitative and quantitative and apply to the amino acid as well as the carbohydrate composition. However, in order to arrive at firm conclusions, a much larger volume of data will be needed than has yet been obtained.

Summary

Preliminary results indicate that the eating quality of poultry is improved when the basal ration is supplemented with a milk product. Suggestions are offered to explain this result. Although the studies reported here have been in progress 10 months, much remains to be done and the authors wish to encourage others to work in this field.

v v

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2. Lineweaver, Hans—Southeastern Poultrymen & The Virginia Poultryman, October, 1955.
3. Maw, W. A.—U.S. Egg & Poultry Magazine, 32-6, May, 1935.

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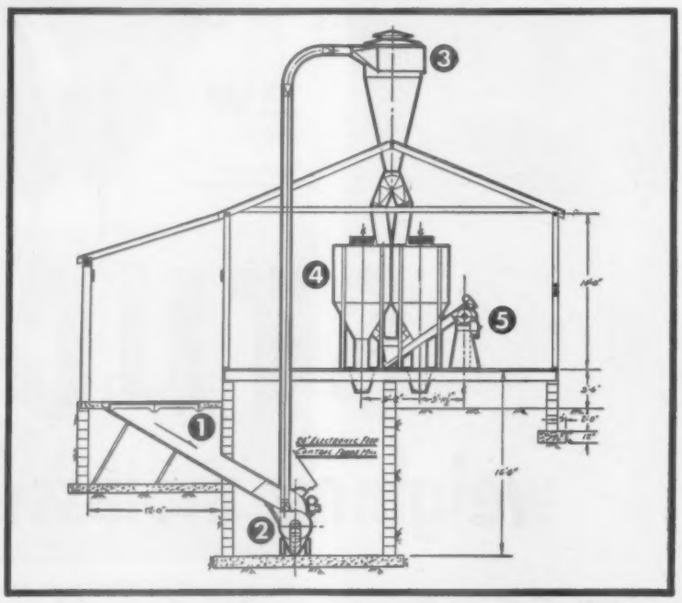
The Fords "Remote Control" mill (2) is operated electrically from any convenient location inside or outside the plant. A push of a button while the mill is running allows the operator to control the rate of grind as needed, to grind various roughages as well as ear corn and grain.

The ground material is then conveyed by the hammermill fan, through a Fords Dust Collector (3), directly into one of the two Fords Vertical Mixers (4). These specially designed mixers are mounted on scales that weigh the material in either mixer. The weight of the grist and supplements can be determined as the materials enter the mixers. The dry mix can be elevated into holding bin, bagged off or bulk unloaded into the customer's truck.

When molasses is to be added, the contents of either mixer can be conveyed directly into the Fords "Forced Feed" Molasses Blender (5). Here "forced feeding" handles the light bulky roughage feeds as rapidly as grain based feeds. The finished feed then is either bagged off and loaded or bulk loaded from the blender into the customer's truck.—As finished feed is being delivered to one customer's truck the next customer can dump his material into the dump sink where it is ready for immediate processing.



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The Value of Animal Fat in Rations for Milk Production

● O. H. Horton, K. A. Kendall, W. B. Nevens and R. G. Hansen, Department of Dairy Science, University of Illinois; Journal of Dairy Science, Vol. 39, No. 10, pages 1461-1468 (October, 1956).

The value of fat in rations for dairy cattle has long been a subject of experimental investigation. Most of the studies have been concerned with vegetable fat or fat from natural feedstuffs. However, there do not appear to have been any reports on the feeding of stabilized fat to dairy cattle.

The purpose of this study was to determine the effect of feeding concentrates containing different levels of stabilized animal fat upon milk yields, percentage butterfat content of the milk, and the composition of the butterfat of dairy cows during the barn-feeding and pasture-feeding periods.

Twenty-six cows of the Ayrshire, Brown Swiss, Holstein and Jersey breeds from the University of Illinois purebred herd were used. Ten cows were placed on trial in February during the barn-feeding season. On May 21 the cows were turned to pasture and were both barn-fed and pasture-fed through July. A second phase of the experiment was begun on May 21 by adding to the trial 16 cows that had been on pasture about 25 days. They were both barn-fed and pasture-fed until Aug. 16.

Cows in both phases were divided into three groups, named the 4%, 8% and 12%. The group name coincided with the fat content of the grain mixture fed to that particular lot. The experimental grain mixture consisted of ground shelled corn, ground oats, soybean oil meal, calcium-phosphorus mix, salt and an A and D concentrate, and analyzed approximately 15% protein. The stabilized fat used was a dry, free-flowing, granular product, which was a hydrogenated tallow.

The control grain mixture contained approximately 4% natural vegetable fat and no animal fat. The 8% grain mixture contained approximately 4% vegetable fat and 4% animal fat. The 12% mixture had about 3.5% vegetable fat and 8.5% animal fat. These grain mixtures were fed in proportion to milk yield after making allowance for breed of cattle and test of milk.

Daily milk records were kept. Butterfat percentages were determined for each cow every two weeks. At the end of each four-week period, the milk of each cow was analyzed by determining the saponification, iodine and Reichert-Meissl values. The vitamin A of the milk was also determined.

Plasma carotene and vitamin A for each cow were also determined. Average live weights were taken monthly of all cows.

The cows receiving the grain mixture containing either 8% or 12% fat for periods of 12 to 22 weeks developed no abnormal physiological effects. The cows in the 12% group received per cow per day approximately 1.2 lb. of fat, of which 0.8 lb. was animal fat.

No significant increase in yield of milk or percentage content of milk fat was obtained with different levels of fat feeding. There was no significant change in the composition of butterfat as measured by iodine, saponification and Reichert-Meissl number. The carotene and vitamin A values of milk and blood plasma were not significantly altered when the cows were consuming added fat in their grain mixtures.

COMMENTS:

Unlike other types of livestock, dairy cattle apparently do not benefit from the inclusion of animal fat in their rations. Normally one would expect an increase in feed efficiency, even though no other benefit is noted. However, this was not the case in this test.

It is said to be unlikely that animal fat will become a usual replacement for corn or other energy-supplying feeds in dairy rations. However, such replacement might be made in some cases in rations of high-producing cows when the cost of stabilized fat is less than 2.25 times that of corn or other grains.

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into feeds, it does increase the price of finished feeds. At the present time it is rather difficult to find a more cost-conscious group than the dairy farmers. It takes selling to get them to feed even a cheap mixed concentrate.

●

The Value of Pelleting the Concentrate Part of the Ration For Lactating Cattle

● H. P. Adams and R. E. Ward, Eastern States Farmers Exchange, Inc., West Springfield, Mass.; Journal of Dairy Science, Vol. 39, No. 10, pages 1448-1452 (October, 1956).

The trend at present is toward coarse-textured dairy concentrates. However, there is some controversy as to whether medium or coarse-textured mash rations are more digestible.

The trial reported here was conducted to compare a conventional 16% protein mash type concentrate to the same ingredients in ⅛-in. pellets for milk and butterfat production.

Two double reversal trials were conducted, each with 12 cows and three 50-day periods. The cows were fed chopped hay, grass silage and corn silage. During the first trial the cows were fed grains and concentrates according to Eastern States Farmers Exchange recommendations for good forage. For cows producing 4% milk, this would be: 2 lb. of concentrate per 15 lb. milk, 6 lb. per 30 lb. milk, 10 lb. per 40 lb. milk and 15 lb. concentrate per 50 lb. milk.

During the second trial the cows were fed the concentrate according to the recommendations for poor quality roughage, the level therefore being higher than in the previous trial. It was thought that the more liberal feeding of concentrates might accentuate any differences between the mash and the pellets. During the trial all concentrates and forage fed were weighed and the feed not consumed was weighed back. The milking was done by machine according to a uniform procedure, and the milk was weighed at each milking. Samples for butterfat testing were taken twice a month and concentrate feeding was adjusted twice a month on the basis of production.

In the first trial both groups of cows accepted both grain rations readily. It was found that the differences in milk production and butterfat test were not significant. However, the differences in butterfat production were highly significant, and the difference in fat corrected milk production was significant at the 5% level of probability in favor of the mash concentrate.

The second trial indicated a significant difference in butterfat test and differences in butterfat and fat corrected milk production in favor of the mash concentrate, but these differences were not significant. Also the differences in milk production were not significant.

The combined results of both trials indicated a highly significant difference in butterfat production and butterfat test and a significant difference in fat corrected milk production in favor of the mash concentrate. There was no significant difference in the total yield of milk.

Separate palatability trials indicated that to most cows the two concentrates were equally acceptable. However, a few cows refused the pellets entirely.

COMMENTS:

The results of this test would indicate that it does not pay to pellet dairy cattle concentrates, at least not in the half-inch pellet. The question naturally arises as to why pelleted rations are not as good as mash rations. Is the difference due to changes in chemical composition as a result of pelleting or simply due to a change in physical form? Since digestibility studies were not a part of this test, it is difficult to decide this question. However, the reports of other workers would tend to favor difference because of physical form. In this connection, it would be interesting to determine whether a smaller pellet might not prove more effective.

Practically speaking one would not expect any real benefits, nutritionally at least, from pelleting dairy concentrates. The primary aim in pelleting rations such as for poultry has been to increase daily consumption and in turn increase gains. Since dairy concentrates are fed in only limited amounts, this advantage is lost. There might be an advantage in feeding pelleted concentrates in milking parlors where a cow usually has only a few minutes to eat her grain ration. Pelleting the grain portion might enable her to eat a greater amount in a shorter period of time. This, however, has not been any real problem.

At the present time, it does not appear advantageous to pellet dairy concentrates.

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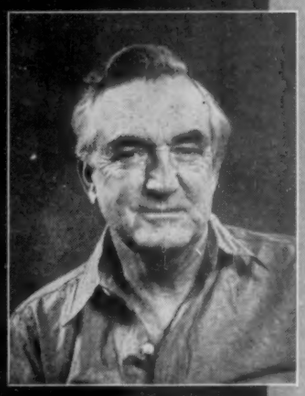

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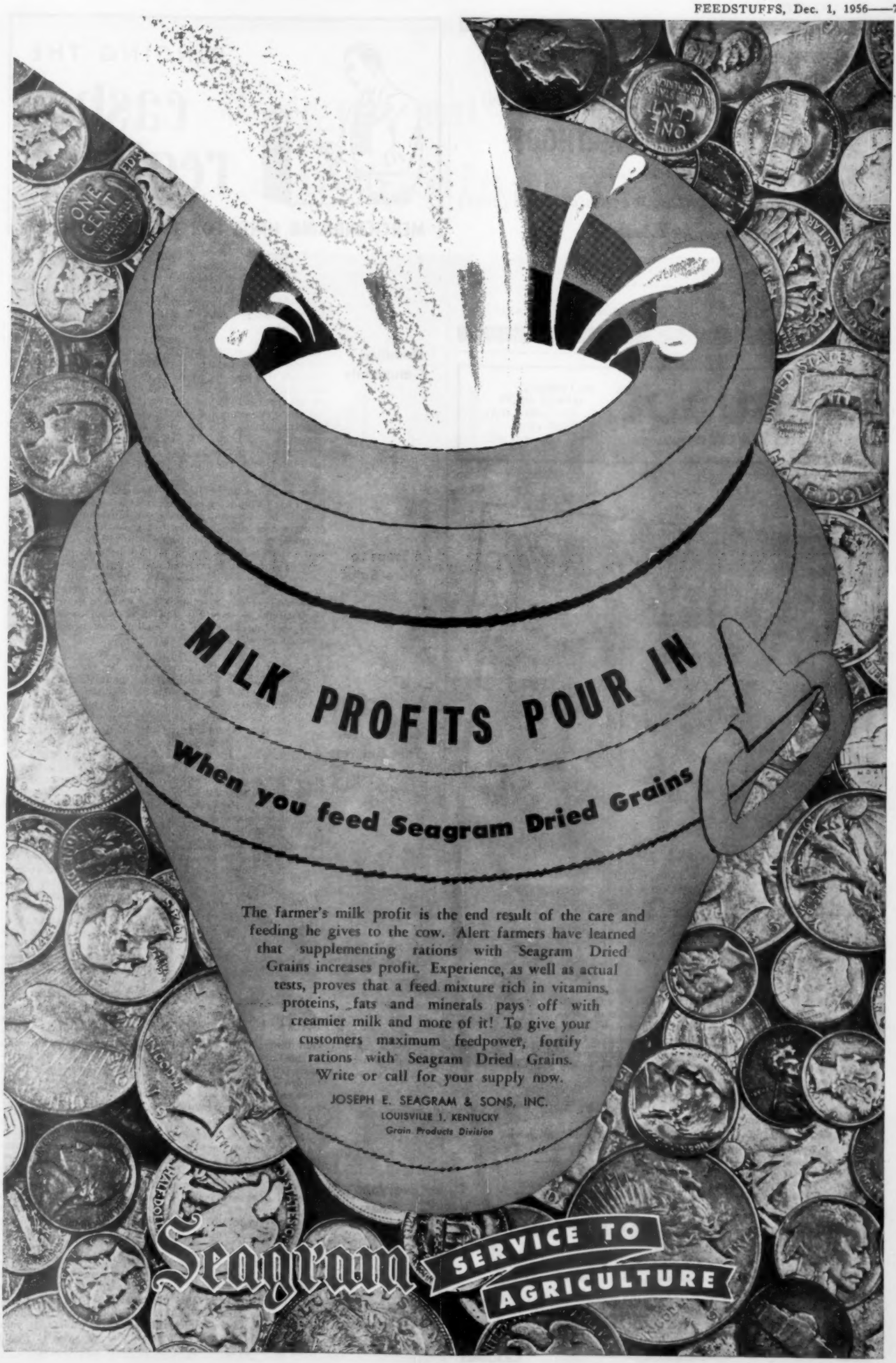
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RINGING THE cash register

MERCHANDISING HINTS FOR THE FEED RETAILER

Handling Complaints

There are various techniques for dealing with complaints. One retailer, for example, operates on the theory that 98% of all customers are sincere when complaining. The retailer figured that even if, technically, in some cases there was no basis for complaint, the fact that the customer was sincere compelled the firm to make some sort of adjustment. Whether or not you accept this theory, the first step is to get the complaining customer in a reasoning frame of mind. If possible, both the adjuster and customer should be seated, and the customer should have all the time he wants to explain his point of view. One store owner says: "Let the customer get everything off his chest before you say anything at all. Don't blame the customer or argue with him. Suggest that you'll do something by way of adjustment, thus showing that you recognize the customer's rights and opinions. Usually, when a customer sees that the merchant wants to be fair, the customer tries to be fair, also."

4 Steps to More Sales

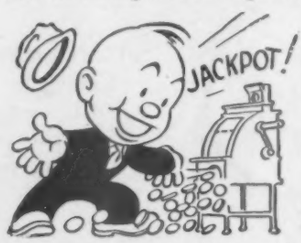
Four steps for improving the feed dealer's business were listed by an industry consultant at a recent meeting. He said: 1. Decide what margins you must have to make a profit out of your business. Set those margins and stick to them. 2. Decide whom you can afford to sell and eliminate that business which is costing you money every day. (You may be surprised and slightly shocked at the percentage of your customers who actually cost you money every time your truck stops at their door.) 3. Build your strong customers who want to grow into bigger customers—carefully and on a sound basis. 4. Start a prospecting program for finding new prospects who want to grow.

Signs Give The Answers

Signs, like good informative packaging, is an important part of the over-all merchandising picture, states a merchandising expert associated with Sears, Roebuck & Co. Good informative signs not only aid the customer in making his selection, but in many instances, train the sales person by keeping him informed of specific selling features of the merchandise concerned. Good signs incorporate all of the features not obvious in the merchandise itself. Merchandise can sell itself with the aid of an effective sign program that anticipates and answers the customer's questions—thus becoming a silent salesman in augmenting the efforts of selling personnel, claims the Sears merchandiser.

Local Ads Score High

Newspaper ads which get the reader's attention, tell a complete sales story and persuade him to buy are the ones which ring the cash register. Not all ads, of course, fall into this category. Experience has shown — and objective newspaper studies back up the theory — that folks read and act upon advertising that sells products and services through local proof, rather than general statements about performance. A recent issue of the Merchant's Checkergraph, publication of the Ralston Purina Co., illustrated the point by reproducing two newspaper ads side by side—one of a general nature and the other with a "local" angle. The ad with a "local" picture and copy scored 40 (read by 40% of the farmers polled) as against 10 scored by the "canned" ad.



Everyone's A Salesman

Salesmanship is the key to economic progress and nothing happens until something is sold, states Ralph Everett, Empire Sales Training Center, Buffalo. Everyone is a salesman in one form or another. You may not carry the label of salesman but you can bet your life that sometime, somewhere, you'll have to sell something. The more you have mastered the simple fundamentals of selling by practice, the more successful your business will become.

½c for $1 Of Business

The importance of advertising by the feed retailer is emphasized by Prof. Henry H. Bakken, University of Wisconsin, in analyzing a Wisconsin survey of feed dealers. He says: "From our limited analysis in the survey it looks like each one-half cent or less spent for advertising brings in an additional dollar of business. If your gross margin is 15% on each dollar of sales it would seem to be good business to do more advertising."

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FEED MILL MATERIAL HANDLING

(Continued from page 38)

is mainly applicable in loading cars. Many truck floors are not sturdy enough for a heavy lift truck. In addition, a lift truck with a low enough mast to operate in trucks does not have a great enough lift height to stack for maximum use of floor space. The small "take it or leave it" pallets do not provide a stable platform for stacking three pallets high. Most plants find it difficult to stack more than two high with 40 50-lb. bags to a pallet. Generally speaking, a "take it or leave it" operation lends itself best to a terminal type feed mill with car orders in the majority. The manpower savings are rapidly overshadowed by higher costs of pallets and lift trucks in a mill with principally trucking trade.

The other notable pallet size is used in a conventional manner. That is, the pallets are loaded from the packer, stacked in the warehouse, removed from storage, and bags are manually transferred to car or truck. This pallet is a stable base and can easily be stacked three or even four high without tipping. The five-foot width can be driven into boxcars with room to spare. This width also fits into any highway truck where it may be rolled to the face of the load on a pallet dolly and unloaded. For most plants, the larger size pallet offers the most satisfactory results. It is cheaper than a "take it or leave it" pallet, provides for a more stable and larger load and can be stacked higher.

The lift truck itself is worthy of a good deal of study before purchase. All manufacturers of these vehicles make a quality product with each one trying to outdo the other in engineering advances. The automatic transmission is a recent improvement which is well worth the slight additional cost. With this device, clutch trouble and gnashing of gears when changing direction are eliminated. Actual engine abuse is impossible with the cushion of the torque converter. A load backrest is important to keep bags from falling onto the driver and to prevent tearing of sacks with pointed corners of the carriage. An overhead guard is a worthwhile safety precaution in high piling. Also worthy of consideration is the use of propane gas. This gas is no cheaper than regular gasoline unless purchased in large quantities. However, its advantage is in less engine wear and oil contamination. Oil need be changed far less often and major overhauls become less frequent.

When operators have compared a rigid fork with one that is pin-connected, they prefer the latter. This is because the pin-connection permits an automatic compensation in height for picking up a pallet which has tipped slightly on a high-piled stack. The selection of lift truck size is one area where an extra factor of safety may become a detriment to efficient operation. The larger the capacity, the longer and less maneuverable the truck becomes. Large trucks require a wider aisle and may even prohibit driving into the ends of a boxcar. The 3,000-lb. capacity truck is usually sufficient for feed mill use.

Highway trucks are becoming the dominant carrier of finished feeds. In the future we will see lift truck operations expanded to more mills to permit the versatility and efficiency they offer. Automatic palletizing is becoming a possibility with several concerns offering such a device for sacked goods. At present, these machines are expensive and difficult to justify. Because of increasing costs, however, the industry is heading further toward automation and it will certainly not leave the automatic palletizing field untouched to reach its everchanging goals in efficiency.

Bulk Feeds: Just as the use of bulk ingredients has helped feed manufacturers, bulk feeds have saved money for the dealers and feeders in a similar manner. The conventional method of handling bulk in the plant is through several finished feed holding bins, thence through a scale and into a waiting truck or car. The labor for warehousing and packing and the cost of bags are eliminated at a substantial savings. When bulk was first introduced, only a few feeds in a complete line were offered or even desired in this form. Since this time, some mills offer bulk in as little as one-ton quantity of any feed on the price list. Such versatility is imprac-

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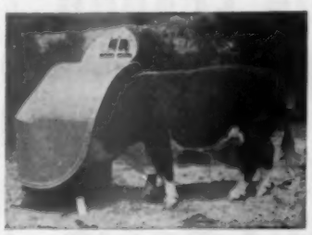

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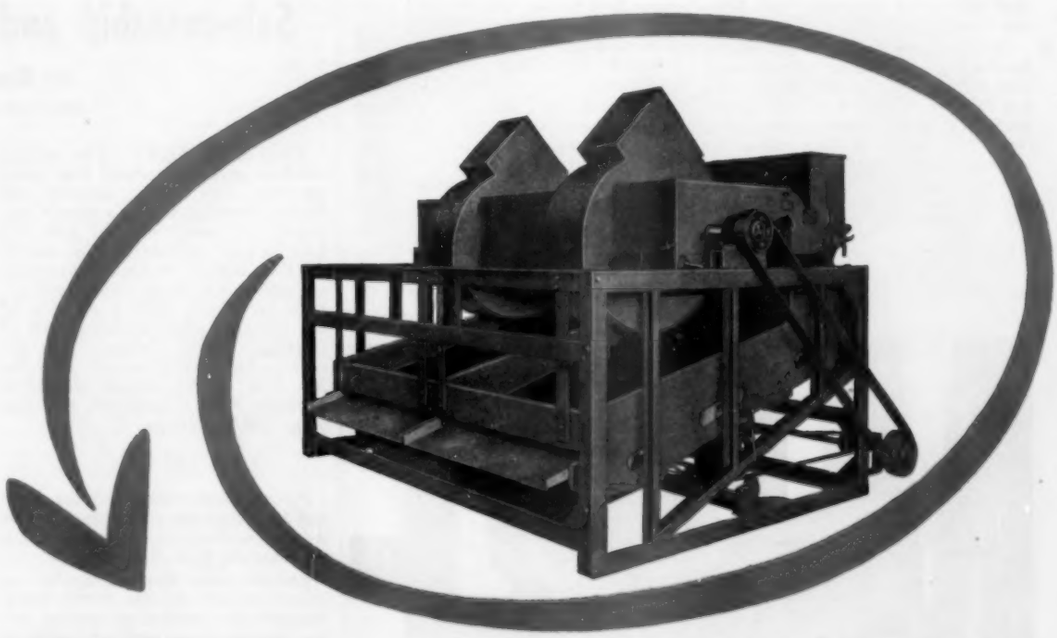

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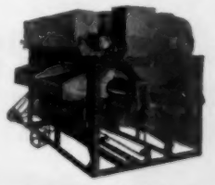
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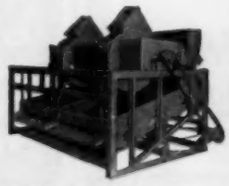
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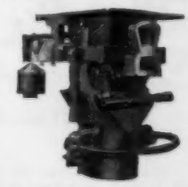
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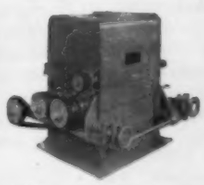
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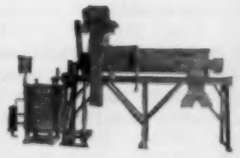
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GRAIN SANITATION CONFERENCE—(Left) Early arrivals at the National Grain Sanitation Conference held in Kansas City Nov. 12-13 pick up their registration blanks. Left to right are: G. W. Fenton and H. W. Dock of the C-G Grain Co., Topeka, Kansas, Carl Dawson, Ferguson Fumigants, St. Louis, and Paul McSpadden, Commander-Larabee Milling Co., Minneapolis. (Center) Herman Steen, at left, vice president of the Millers National Federation discusses the program with G. S. Kennedy, General Mills, Inc., president of the federation, and George Wagner, Pillsbury Mills, Inc., chairman of the sanitation committee and program chairman for the conference. (Right) The caption could well be: "And I said to him!" The emphatic speaker is Harry Hunter, secretary of the American Corn Millers Federation, Chicago. Mr. Hunter appears to be putting across a vigorous point to Donald S. Eber, secretary, Association of Operative Millers, and George S. O. Smith, Flour Mills of America, Kansas City.

tical with a few stationary bulk holding bins at the mill.

One company has taken the lead in developing a system of portable bulk bins holding one ton each. These bins are filled on a floor scale and transported to storage areas in the regular sack warehouse by the same lift trucks used for palletized feeds. When trucks arrive for loading, the previously filled tanks are transported and emptied into the truck by the same fork trucks used for sack loading. Boxcars may be loaded in a similar manner. The system offers complete versatility from a one-ton truck to a 30-ton carload.

The industry certainly does not lack imagination in solving its problems. The plants are now being run by a new breed of technically trained men who leave no stone unturned in their efforts to steadily improve product quality and operating efficiencies.

Salesmanship and the Feed Industry

By George Hill
Oklahoma A&M College

EDITOR'S NOTE: *The selling methods used by a retail feed store operator will either impress the farmer, keeping him as a steady customer, or cause him to take his business elsewhere. The selling methods which the farmer approves are outlined in the accompanying article by George Hill, a member of the business administration staff of Oklahoma A&M College. This article is the text of a talk given by Mr. Hill at the annual Oklahoma Formula Feed Conference at Oklahoma A&M College.*

v v

Poor selling looks much the same and is pretty sad wherever you find it—door-to-door, in weak kneed advertising or in a feed store.

Several years ago a magazine solicitor called at our home, went through the motions of getting out his identification card and said to my wife: "This is my picture." My wife was puzzled because he was obviously holding a small blank card. Then he quickly said: "See it's made to match the blank look on my face." What a woeful substitute for intelligent selling that was!

Recently an appliance advertisement portrayed two parents with their small sons, Billie and Clarence. Billie was saying to Clarence: "Just think, and that piece of junk (eyeing the advertiser's refrigerator) is going to set Dad back two whole months' pay?" Just what was that advertiser trying to prove?

Neither does a busy farmer like it when he is greeted as he stands waiting in some feed store with a half-hearted: "Want something?"

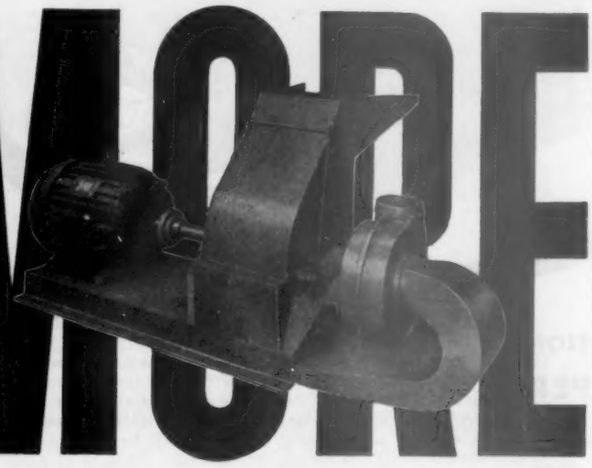
Perhaps it is reasonably accurate to state that the value of Oklahoma livestock approximates $250 million. For example, live sales of livestock other than poultry in 1954 totaled over $140 millions. Poultry and egg sales amounted to over $15 millions. Whole milk sales ran over $29 millions. Cream added another $6½ millions. About 60 million bushels of wheat, 3⅘ million bushels of grain sorghum, and large amounts of corn, other grains and hay were sold.

Naturally the livestock feeding business is vital to the effective growth and development of a prosperous rural and urban Oklahoma. One thing is certain above all else in any business. You have made a sale rather than merely taken an order only if the customer returns.

In livestock production, a fine prod-

you get

MORE



for your dollar with a

Schutte HAMMER MILL

$ FASTEST SCREEN CHANGE OF ALL: Screens are changed at record-breaking speed while mill is running. With cover closed at all times, there's no exposure to whirling hammers. Screens slide in and out without jamming or sticking.

$ UNEQUALED RUGGEDNESS AND STAMINA: Built to handle heavy work schedules, Schutte Mills feature special heavy steel construction welded at every stress point.

$ HIGHLY SERVICEABLE SIMPLICITY: Downtime is cut to a bare minimum. All parts are quickly accessible without disturbing feed arrangements.

$ SCHUTTE PAT. ADJUSTABLE HAMMERS: 10 quickly-positioned cutting surfaces assure long cutting life and low hammer cost.

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uct is the prime requisite of any successful sales program; hence, progressive livestock producers are entitled to be very proud of their progress in improved breeding along lines desired by their customers for their many products. Such work as developing resistance to disease, producing specialized strains to meet demands of exacting buyers, developing greater livability, especially in poultry—these are the basic elements of success.

Today the livestock producer is being greatly supported in such efforts by the work being done in laboratories throughout the nation, whether such efforts are those of agricultural colleges or livestock feed producers. The results mean better products at lower costs at the same time that producers are enabled to realize greater profits. Thus all society benefits.

Regardless of the special type of products upon which the individual hatchery, mill or feed store bases its operations, there is one point in which all are interested: How to run that business more profitably. We have come to accept as a must that production shall be efficient. Yet a good operator knows that effectiveness of merchandising is equally, if not more important, than production alone.

Get Customer's Viewpoint

Your customers likewise buy because the way is clear for them to make a profit. In selling, it is important to get the customer's point of view. Whatever is uppermost in a prospective customer's mind becomes the basis upon which that particular transaction must be closed—it is the key issue!

Remember, all sales are not made on price alone—indeed price is often the least important consideration. Your patience, friendliness, cooperation, and informed advice as to how your customers may better solve their feeding, cleanliness, selection, disease elimination, nutritional and marketing problems will frequently be the real pay-off. For example, in the case of poultry, in many markets early broilers bring as much as those three times as large produced later. Flocks should reach the peak of laying production when prices are high, for according to an old saying, an egg in the fall is worth two in the spring.

Naturally customers expect high quality in chicks, feeds, supplies, formula feeds, insecticides and remedies sold. A prime rule of salesmanship is that you must know enough about each single item you offer for sale to show its uses, how it will serve the customer, precisely what needs or desires of the customer it will fulfill. As a fine salesman once said: "Last year over one million quarter inch drills were sold simply because many people wanted quarter inch holes." Let's keep our eye on the real target. Many a woman has bought an automatic washer to avoid backaches.

Know Customer's Business

It is vital that the owner and employees of any feed store know the character of their customer's business and his objectives. One person gets into livestock production so he will be working for himself after he has expanded his operations; another, puts first in his mind the production of prize livestock to show at fairs; to still a third, incidental use of certain surplus or even otherwise unusable farm products may be involved, such as use of skim milk, insects, grasshoppers, forage, pasture or ensilage. In this last case doubtless a substantial cash income is anticipated as well as food for consumption of the farm family. The important point though—each buyer must be sold on the basis of the dominant thing he or she expects to get out of the purchase.

Now still another important sales principle emerges—"Sell the Gadgets Too!" No longer do livestock producers buy feeds on a price per bag basis, but rather look to fattening, egg-laying, lean-meat yielding or other special characteristics. A hatchery may build a strong feed business on the strength of selling mill freshness and full vitamin potency. It has been stated that 66% of all poultry feeds and 28% of dairy feeds are formula feeds. Therefore, it is quite important to play up new ingredients with evidence of their effectiveness.

The Little Extras

It is usually not hard to meet and beat competition by emphasizing quality, for people know that they rarely get "something for nothing." What do we mean by saying to sell the gadgets too? Simply that if the product is otherwise quite good, it is ordinarily the little extras that spell the difference—SUCCESS!

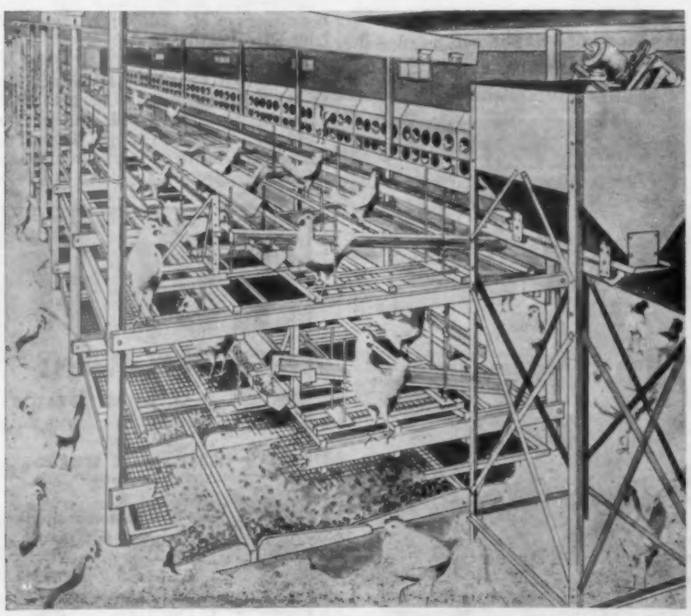
To illustrate, a woman who had shopped six different cars said she thought the motors were all alike so she decided to get an automobile which had a vanity case on each side of the back seat. Some of the gadgets of feed store operation involved cleanliness of chick displays, frequent changing of displays both in counters and windows, careful grouping and showing of varied sorts of products such as remedies, keeping store fronts well painted. Windows should be kept clean and cracked glass replaced. The efficient operator keeps the store interior clean and light as well as properly ventilated or preferably even air conditioned. Perhaps equally important is the provision of clean rest rooms for use of customers.

Do you wait on your customers promptly and in turn? Do you help all the ladies or only the good looking younger ones carry purchases to car or truck? If caught in the act of locking up for the night, would you reopen to accommodate a farmer who arrived to trade a little late? Do you obtain useful ideas from county agents, trade journals and agricultural extension bulletins and pass them on to your customers?

Some stores have combined such useful information in a regular monthly or quarterly bulletin which they send out to their customers. Some have found it very constructive to lead in such activities by scheduling regular monthly meetings at their stores.

The foregoing points are basic in selling, especially when products not only look much alike but are often actually very similar in quality.

Better methods of livestock selection, feeding and care, along with treatments to reduce disease are being developed daily. Numerous marketing studies are showing just what type of product the consumer really wants and will pay premium prices to get. Research has gone far in study of vitamin B_{12}, antibiotics and numerous special additives. A great amount of basic work is under way to enable feeders to benefit from de-



TOP PRIZE—Here is an artist's conception of the interior of the push button laying house offered as top prize in a $20,000 Egg Sweepstakes sponsored by Chas. Pfizer & Co., Inc. The plant is to be supplied with automatic equipment and is part of the grand prize valued at $15,000, according to company officials. Automatic feeding, watering, cleaning, ventilating and temperature controls will be provided. In addition, the winner will receive 1,600 pullet chicks and 20,000 lb. of laying feeds. More than 200 other prizes will be awarded. The sweepstakes—subject to federal and local regulations—is open to any person 18 years of age or older who owns, operates or lives on a farm or who raises poultry.

"With our BROWER MIXER we can handle any size feed order and get it out ON TIME"

"We use our Brower Mixer to make our own brand of feeds and estimate a 15% gain in feed profits. We also do custom mixing, and the number of customers we serve has increased about 30%. Before we acquired our Brower Mixer we were unable to handle any large tonnage; now *we are in a position to handle orders of any size and get them out on time.* The Mixer operation has been very satisfactory—no trouble of any kind. We find it very economical to operate—turns out capacity tonnage at a very low power cost."

J. M. Munguia

J. M. Munguia & Son
NOGALES, ARIZONA

BROWER
Whirlwind
MIXER

The dependability, fast mixing action, and low cost operation of Brower Mixers have made them the favorite of feed dealers everywhere. Brower Mixers WHIRL the ingredients instead of just stirring or tumbling them . . . produce an unusually thorough mix. Brower-mixed feed contains the proper ingredients in the proper proportion . . . every sack has the same even mixture.

Brower Mixers produce a perfect blend in approximately 10 minutes—at a power cost of 3¢ to 5¢ a ton. Five sizes—700, 1200, 2000, 3000, and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy welded steel construction—built to give years of trouble-free service. Observation window permits eye level inspection of batch. Designed for fast, easy loading and sacking.

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30-DAY TRIAL
Easy Terms

BROWER MFG. CO.
402 N. Third, Quincy, Ill.

World's Largest Selling Mixer

velopment of the nitrofurans which seem to be unusually effective in the controlling of numerous diseases of poultry. Aureomycin has been used effectively for some time with good results, especially in hog feeds. One of the major results of these numerous developments is more meat and actually with greater feeding economy.

Advertising Necessary

As we have already stated, quality products, effective and friendly informed service go far toward creating a successful operation. Even so, advertising is still necessary if expansion is desired. Probably this effort should involve use of the classified telephone directory, direct mail, telephone solicitation in the local area, newspaper advertising, exhibits at county and other fairs. Radio advertising may be desired and television is useful for larger producers and distributors of feeds and related products. Membership lists of poultry and livestock feeding or shipping associations should prove useful in direct mail efforts. Naturally lists of existing customers would be used. Trade journal or farm journal advertising may serve for some rather specialized purposes.

Firm or feed trade names should at every opportunity appear on products, firm stationery, invoices, checks, as well as on signs and delivery equipment. Often a feed store or hatchery can obtain a public relations tie-in with a railroad or airline with pictures showing your firm's name appearing, say on your delivery truck. Write-ups featuring your firm's name appearing in pictures or writers' columns in newspapers or farm journals are better than advertising. Human interest stories about your personnel, business methods, attendance at association meetings are often good material for publicity. To your customers all these factors are evidence of your progressiveness.

Let us finish on a few theoretical sales musts. Ego is the strongest force in human nature. Make a fuss over your customers, pay them sincere, honest compliments. You'll find your competitors are too busy, interested in too many other things to follow suit. Get enthusiastic! Yes, even excited over your products and what they'll help your customers accomplish.

The good salesman also makes it a point to observe the following basic rules: (1) Call customers by name. (2) Smile even when personally unhappy. (3) Say thank you. (4) Sympathize with customers. (5) Listen to your customers. (6) Never high-hat—sell 25 chicks if the customer wants them. (7) Never argue—let the customer win his point and you'll get the order.

READY FOR PRODUCTION

HUNTINGTON, W. VA.—Production from the new $50,000 feed plant of the Martha White Mills, Huntington, W. Va., is scheduled to begin Dec. 1, according to Jack Broderick, president of the company.

Curtains on Brooders Cut Costs, USDA Says

WASHINGTON—Cost of brooding chicks in infrared-lamp brooders can be cut in half if the brooders are fitted with side curtains, the U.S. Department of Agriculture reports.

Cooperative research by the Department's Agricultural Research Service and the Purdue University Agricultural Experiment Station shows a saving of about 2¢ a chick, according to John G. Taylor and Ernest A. Johnson, USDA engineers, who conducted the experiments at Lafayette, Ind.

Testing during the normal 11-week brooding period showed no significant differences in gains and feed efficiencies between chicks reared in brooders with and without curtains. But brooders without side curtains required almost 93% more electrical energy than those fitted with curtains.

The materials used for these energy-saving curtains—white vinyl plastic, clear vinyl plastic, and 32-gauge aluminum sheeting—all proved about equally effective in reducing production costs. Clear plastic curtains have the added advantage of visibility.

Use of curtains on chick brooders is not new. In the past, however, it has been customary to use makeshift materials, many of which created fire hazards. The materials often used, such as burlap sacking or discarded fabrics, did not reduce brooder operating costs significantly.

The lamp-controller systems used in the experiments were a proportional-time modulator, a commercial brooder "wafer" type, and a commercial high-sensitivity thermostat. The proportional-time modulator type gave a slightly greater cost advantage—amounting to 0.2¢ per chick—than the commercial high-sensitivity regulator, and it was 0.9¢ per chick better than the wafer-type thermostat.

The brooders used in the experiment were of home-made plywood construction, fitted with four 250-watt lamps mounted under a 4 x 4-ft. plywood top. Thermostats controlling the lamps were set to maintain the same air temperatures under all brooders in the tests.

The tests were conducted in four 10′ x 12′ insulated colony houses—two having fixed, insulated sashes and the others 6-pane movable sash windows—and in one 26′ x 132′ house with seven 12′ x 26′ pens separated by wire partitions.

BUYS FEED FIRM

MOSINEE, WIS.—Herman Marquard has purchased the former Mosinee (Wis.) Milling Co. and has renamed the firm Marquard Feed & Farm Supply.

ARE YOU FORTIFYING YOUR FEEDS WITH THESE 3 essential Ingredients?

SAFETY SERVICE SATISFACTION

Vitadine and Swinex contain guaranteed potencies of vitamins, rare minerals, and antibiotics. Packaged to insure safe, uniform distribution in every spoonful.

Vitadine and Swinex bring to you the latest nutritional advancements. Free Formula Service helps you give your feeds a competitive edge.

Feeders get more critical every day . . . demand more profit from every pound of feed. You can be sure they will be more satisfied with your feeds fortified with Vitadine and Swinex.

Blatchford's ESTABLISHED IN 1800 VITADINE AND SWINEX

Give You All Three

PLUS Faster Production... Lower Costs!

Complete fortification in one easy-to-use package. No time lost mixing separate ingredients . . . no material lost from spillage or shrinkage. Production is faster . . . costs less!

VITADINE FOR TURKEY AND POULTRY FEEDS is now available 3 ways! Vitadine BUFF LABEL for egg and breeder feeds; Vitadine GREEN LABEL for intermediate growth feeds; Vitadine ORANGE LABEL for maximum growth, contains Arsanilic Acid and new VIGOFAC (100-lb. bag completely fortifies one ton of poultry feed.)

SWINEX FOR PIG AND HOG FEEDS: A complete fortifier that enables you, with one simple mixing operation, to completely fortify all types of pig and hog feeds.

DEMON BRAND OATS: Now . . . order Demon Brand Oats with your Blatchford's Vitadine, Swinex or Calf Feeds, in the same car.

Dept. 2126

WRITE TODAY FOR THE SAFE, SURE ANSWER TO YOUR FORTIFICATION PROBLEMS

GOOD TO THE LAST DROP ESTABLISHED IN 1800

Blatchford's ESTABLISHED IN 1800

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Midwest Plant Des Moines, Iowa
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ELAM GRAIN COMPANY

ST. LOUIS ELEVATOR
CAPACITY 2,500,000 Bus.

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Progress in Aeration of Grain

By Dr. Leo E. Holman and George H. Foster

EDITOR'S NOTE: There has been increased attention to progress being made in the aeration of grain in storage to keep it from going out of condition. The accompanying articles provide information on this subject for anyone interested in the use of this method to help protect stored grain. The first article, by U.S. Department of Agriculture staff members, explains aeration and describes research work in this field. A second article, the text of a talk at a district meeting of the Association of Operative Millers, offers suggestions for persons contemplating the installation of an aeration system.

Aeration has helped one Texas elevator operator solve some of his storage problems. Like most operators, he used to "turn" his grain—move it from bin to bin—to condition it. To do this he had to keep one of his five steel storage tanks empty.

He installed an aeration system with the help of an Agricultural Marketing Service engineer. Now, he doesn't have to turn his grain, and he has room for another 26,000 bu. of sorghum. The system paid for itself in less than a year.

Aeration probably won't eliminate all turning, but it seems to have a place in the future. It can condition grain just as well as turning—and sometimes a lot better—and it costs less. Once grain is stored, it may go out of condition for a number of reasons. Condition is affected by heat, molds, bacteria, insects, odors and other factors.

To combat these problems, elevator operators have long practiced turning grain. Some attempts were made to use aeration for this purpose in the '30's. However, early failures led to skepticism within the trade.

Recently, increasing reserves of grain have directed research towards aeration. Much of the early work was done on Liberty ships used to store surplus grain. Research has uncovered many of the early mistakes and provided practical aeration systems.

In aeration, outside air is moved through the grain by a fan. The fan is hooked with a duct that evenly distributes the air through the grain. In some cases, connecting ducts enable one fan to aerate several storages. After a while, the temperature of the grain comes down to that of the outside air. By cooling the grain, aeration does a number of things. It tends to minimize mold growth, fermentation and insect activity. Most grain molds and bacteria grow slowly, or not at all, below 70° F. Insect reproduction stops at grain temperatures below 60° F., and many insects die from starvation when grain temperatures drop to 40° F.

Aeration also equalizes grain temperatures, thereby preventing moisture migration within the grain mass. This is most important in the northern areas where variations often cause troublesome migration and accumulation of moisture. In the southern areas aeration is more important for removing heat than controlling moisture migration.

In the rice producing areas, it is used to hold undried or partially dried rice in storage between dryings. By doing this the undried rice can be held longer between passes through the drier, increasing drier capacity. Some operators claim they obtain considerable drying while aerating. Continuous aeration at least helps reduce rice temperatures and thus retards mold growth and other deterioration.

Marketing research engineers and entomologists have developed methods for using aeration systems to apply fumigants and to clear them from the grain. The fumigant can be recirculated through the grain by providing a return duct system. One grain elevator operator reports that fumigating with his aeration system saves him more than $12,000 a year. In some cases aeration may reduce the number of fumigants that are needed.

Continued research is needed to tackle existing grain aeration problems. AMS is doing just this at seven locations throughout the country: College Station, Texas; Lafayette, Ind.; Ames, Iowa; East Lansing, Mich.; Watseka, Ill.; Athens, Ga. and Manhattan, Kansas.

Tests have been conducted in Indiana with wheat stored in bins 150 feet deep. The wheat was cooled to 50° F., after 500 hours of intermittent fan operation. Power costs amounted to less than 1/10¢ per bushel. In Iowa, it was found that corn can be cooled too much. Additional work is being done to obtain optimum low grain temperatures. Research is being carried on in Michigan with dry edible pea beans. With the trend toward bulk storage of this crop there is added interest in aeration.

The application of aeration to sealed storages is being studied in Illinois. This method may supply satisfactory conditioning without the problem connected with using outside air.

In Georgia, aerated wheat stood

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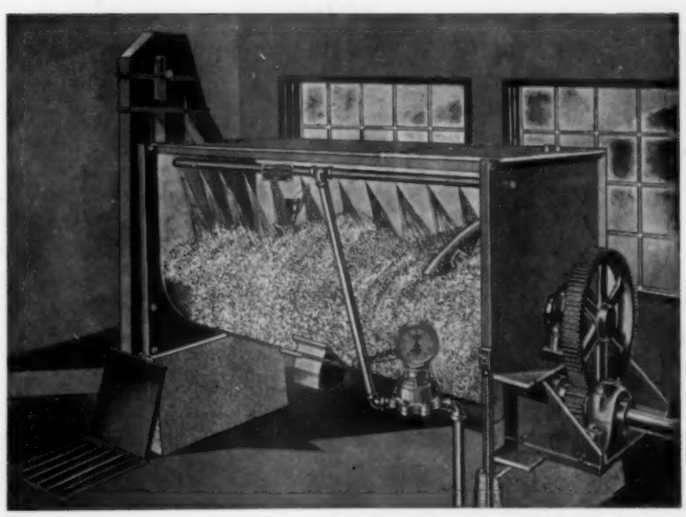

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from December to the following September without being turned. During the same period, non-aerated wheat had to be turned and fumigated three times. The costs of power for turning and for fumigant were seven times the cost of aeration.

Tests have been made in Kansas with aeration being done in stages. It may be done this way or in one step. It costs less in fan operation to cool in one step. However, grain must remain at high temperatures until the late fall.

Temperatures

In the Kansas tests, cooling was started soon after the bins were filled. Grain temperatures averaged around 100° F. Fans were stopped when the grain reached outside temperatures of around 80° F. Second cooling stage reduced grain temperature to 60°, and the third to 40° F. Each stage required from 200 to 300 hours of fan operation to cool the wheat to a uniform temperature.

Generally, aeration takes from 200 to 500 hours in a deep storage. It only takes three or four days in a flat storage of shallow depth.

The volume of air needed for successful aeration depends on several factors. These include geographical area, the kind of grain, the depth of grain and desired rate of cooling. Higher airflow rates are desirable in the South because grain temperatures are higher and there is less desirable cooling weather.

The resistance of wheat to airflow is greater than that of rough rice or grain sorghum, and several times greater than the resistance of shelled corn. Grain is generally aerated with air-flow rates of 1/10 cfm per bushel and lower. Recommendations call for at least 1 cfm per bushel for drying moist grain. Therefore, any drying accomplished during aeration will be minor. Cooling time is about the same regardless of the initial grain temperatures. In Kansas, it took the same amount of time to bring the temperature to below 40° F., when the initial temperature was 60° F., as it did when it was 85° F.

Duct Sizes Important

By Henry Marks

When you contemplate the installation of an aeration system at your plant, good business practice dictates the need for a capable analysis of comparative values offered, in addition to the considerations of price.

While there have been many aeration attempts years back which have failed to do the job, there are some very good reasons why failure was inevitable. First, a thorough study of flow pressure relationships of various grains at various depths was not then available but is now defined by the pressure chart published by the American Society of Agricultural Engineers. Second, the lack of appreciation of the proportion between the volume of air to be moved into the grain and the size value of the duct work precludes good results.

Let us apply a little common sense and practical American ingenuity to determine what will we have to do to aerate. An air entrance, conveniently accomplished, must be made. This is self-explanatory except that you might remember it should not be made through a small restricting orifice. Obviously, the air entry chutes must be stoutly constructed to withstand the grain pressure.

Good air distribution to all corners of the grain is a must. The air must enter the grain with a minimum loss of energy. Stating it another way, the proportion of energy used to get the air out of the duct into the grain, as compared to that energy needed to get the air through the grain itself, should be small. This makes for efficiency.

If we do these four things and employ an efficient fan, then the desired aims will be accomplished.

Two Alternatives

Regarding distribution of air to all parts of the grain, you often have two alternatives to gain the same flow and cooling rate. You may utilize heavy fan capacity with small duct surface, forcing the air to distribute itself, or you may employ low fan capacities with a consequent need for increased distributive duct which will cause less resistance to air distribution. In a number of cases I have been surprised to discover that initial cost has been comparable in either of these approaches, but lower operational cost accrues with less horsepower.

Here are two practical cases in which I have been involved:

In the first case, the prospect asked for a bid. One concern proposed the use of two 3 h.p. fans with a minimum duct work attached to each. For the same work another concern proposed considerably more elaborate duct work but one ¾ h.p. fan. The customer was a little afraid of ¾ h.p. and decided upon one 2 h.p. unit for this job.

In the second case, a very deep tank, relatively small in diameter, was proposed for aeration. One concern offered the use of perforated pipes attached to opposite sidewalls of this tank from the bottom to the top. A small fan would have to be installed in one of these pipes exhausting the air from it, bringing the air through the grain from the other pipe. This device, of course, required less fan capacity to gain the same flow rate because the distance of air travel through the grain was shorter than it would have been had the air entrance been made from the bottom, requiring the movement of air through the whole mass vertically.

Key to Selection

The other approach to this installation required a much lower cost duct placed in the bottom with the added cost of additional fan capacity required to force air through the entire mass from the top to the bottom. In this case, it becomes obvious that the customer was required to choose between equally good systems accomplishing the same work. The key to selection, after establishing equal work bases, became the consideration of cost.

It is probable that you will be offered as many different methods as there are men who offer to sell you aeration. Here are a few of the points you might keep in mind when listening to a story:

Air velocity in the duct probably ought not to exceed 1,500 ft. per minute. You are all quite familiar with

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EXPLANATION—New application equipment for fumigation is explained to two visitors at the Douglas Chemical Co. booth during the recent National Grain Sanitation Conference at Kansas City. Left to right are: J. N. Chisam, Eckhart Milling Co., Chicago, and Hugh J. Mathes, Mt. Vernon (Ind.) Milling Co., listening to Donald Farmer, sales promotion manager, Douglas Chemical Co., and Robert Luthy, of the Douglas sales staff.

the practical aspects of the flow of water in pipes. You wouldn't think of attempting a job requiring too much energy input because the pipe was too small to carry the water needed. This would cause excessive friction and a waste of energy. The same is true in regard to our air-moving problem in the duct.

We must also concern ourselves with the duct pattern for length which will get the air in to all parts of the bin. You may think of this distribution problem in terms of length of lines.

If you want to buy aeration, take your ruler and lay out your air distribution lines before you buy. As long as the length of the lines approaches each other with a small ratio of difference, go ahead and get the system installed because it will aerate the grain.

But when the difference in the length of these lines becomes too great, the distribution of air in your bin will be very poor. It will take too long for the air traveling along some of the lines to do the job and the system won't be uniform in results.

The amount of perforated surface of the duct is worthy of emphasis. While you may be designing for airflow rates of small magnitude, 1/10, 1/20 or 1/30 c.f.m. per bushel, which appear very small, there may be, for example, a total of 3,000 c.f.m. which must go from the duct to the grain through this perforated material. Let us name any point inside the duct as Mutt and any point opposite that in the grain one foot from the duct as Jeff. When air moves from Mutt to Jeff there is a pressure drop, which we feel should be minimal. For example, 3,000 c.f.m. and a duct with 100 sq. ft. of perforated surface would result in a flow rate of 30 c.f.m. through each square foot of duct surface. When this flow rate of 30 c.f.m. is applied to wheat, the air traveling from Mutt to Jeff would account for approximately 9/10 of an inch of water pressure. If, for example, the resistance to air flow through 48 feet of wheat were 4 inches, the resistance between Mutt and Jeff would approximate a 25% increase.

On the other hand, supposing that the duct had only 50 sq. ft. of perforated surface, then dividing 3,000 by 50 the flow through each foot of duct surface would be 60 c.f.m. per foot, which would occasion a pressure drop from Mutt to Jeff of almost 2½ inches of water pressure. This would be an increase of 62½% in pressure, due to that short distance from Mutt to Jeff, and would cause an increase

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in fan requirement of substantial nature.

At least 20% of the perforated sheets for duct surface ought to consist of holes. For example, there is one duct offered with 5% opening which would cause a further increase in fan requirement. Adequate perforated surface of the duct is needed to hold the increment of the initial drop in pressure low in relation to the pressure occasioned by the grain itself. In order to get adequate air distribution, meaning long enough ducts and adequate perforated duct surface, you might use a rule of thumb like this: Ten percent of the floor surface area of your structure should be the perforated area of the duct and this should be well distributed. Note that in the shallow tank, while you may meet a requirement of 10%, extra duct lengths may be required to avoid poor flow lines.

Opening Factor

Looking backward to early aeration attempts, some of the failure might have been due to lack of consideration of this duct surface opening factor. Fifteen or 20 years ago there was one system which used the open ends of six or eight 6-in. pipes. Those six or eight open ends were the only way for the air to get into the grain. Compare this with the 100 sq. ft. of perforated duct surface now recommended.

Related to the duct problem inside the tank is the manifold connecting device often offered for the use of one fan for a multiple bin installation. There are some advantages to the manifold installation, but there are some reasons why these devices in many cases are not the best way to do it. However, it may be valuable to you to give consideration to unitized control, that is, individually energized tanks for aeration, which lead to considerable efficiency over the years.

One of the best publications for over-all understanding of the process of drying, air movement, spoilage, etc., is that of the American Association of Cereal Chemists entitled, "Storage of Cereal Grains and Their Products," published in 1954. Reading this work will be valuable to you and will refresh your memory on a lot of things with which you already have been familiar.

Install your aeration system with maximum leverage for the power. Aeration is much like the Fat Man's Squeeze at Rock City on Lookout Mountain. It is easy for a little flow to coast through, but the fatter they are the more energy you need to shove; and when the amount of fat going through the squeeze gets too great, no amount of energy will move it. Therefore, if you have a fan for aeration of your grain, the duct should be larger than Fat Man's Squeeze so that air moves through easily.

Remember it is pretty well established that aeration is highly effective for cooling and the technique of achieving cooling action is well established. The technique in reverse of what to do after it is cooled still is very much up in the air. Even in the face of this it is less expensive to turn air through grain than it is to move grain through air. Aeration has not been quite as well packaged as the ready-to-bake add water or milk mixes so wonderfully devised by millers.

v v

Mr. Marks is associated with the Ewing Foundry, Indianapolis.

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Ontario Feed Men Receive "Edict"

TORONTO—Murray H. McPhail, secretary, Ontario Retail Feed Dealers Assn., Toronto, has developed a novel idea for calling the attention of the association members to their annual convention on Dec. 5.

It is in the form of an "edict" prohibiting loitering as follows:

"Loitering prohibited—Whereas it is unlawful for any feed dealer to loiter about his mill or premises on Dec. 5, 1956, between the hours of 9 a.m. and 10 p.m., notice is hereby served that any person so charged and found guilty will suffer the penalty of being deprived of the privilege of joining with his fellow dealers and tradesmen on the occasion of the annual convention of the Ontario Retail Feed Dealers Assn. being held in the King Edward Hotel, Toronto, on the aforementioned date."

ELEVATOR BURNS

KIPP, MO.—The Evans Grain Co. elevator and warehouse at Kipp, Mo., were destroyed by fire recently. The damage was estimated at $50,000. Art Magnuson, 64, manager, suffered minor burns while fighting the blaze.

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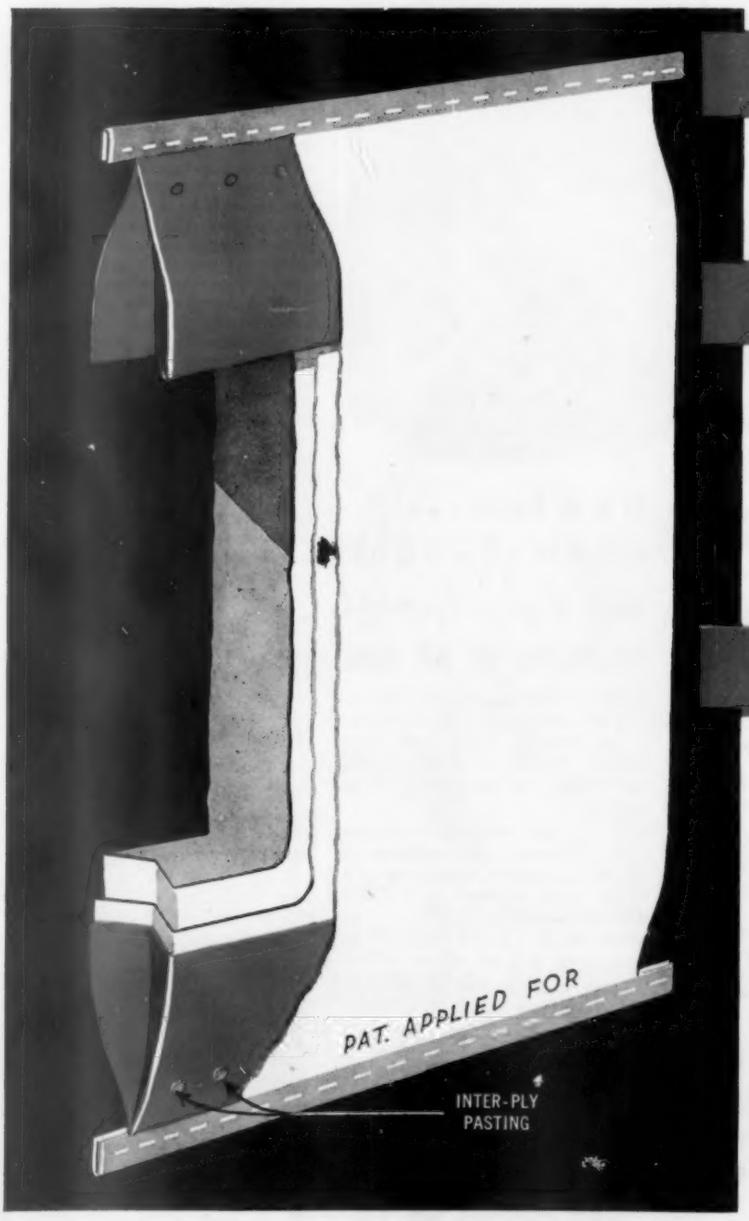

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NEW FEED LAW PLANS OUTLINED

(Continued from page 26)

corn, 46 parts; 50% soybean meal, 34.5 parts; dried whey, 2.5 parts; stabilized tallow, 7 parts; distillers dried solubles, 2.5 parts; condensed fish solubles, 2.5 parts; alfalfa meal, 1 part; limestone, 1 part; bone meal, 2 parts; salt, 0.5 part; B_{12}-antibiotic (Aurofac)supplement, 0.25 part; dl-methionine, 0.10 part; A & D feeding oil (600 units D, 3,000 units A), 0.10 part; feed grade, $MnSO_4$, 0.05 part; niacin, 800 mg.; and an antioxidant.

"I don't believe there is any magic ratio of protein to energy per pound," Dr. Scott said. He did say that more protein is needed in high energy diets.

Dr. Scott said that he attributed the variations in the efficiency of different broiler rations to the lack of balance of amino acids with energy.

"We don't know what amino acids are the most limiting in a ration. We have much testing to do, of individual amino acids and of combinations," he said.

The Illinois scientist predicted that one day nutritionists would be specifying the exact amount of an amino acid for use in a ration containing a given level of energy to achieve maximum growth.

More on Amino Acids

Dr. Gordon talked about amino acids, also.

It has proven difficult to predict the amino acid requirements of the chicken when birds are fed complex rations containing "natural" protein sources. According to Dr. Gordon, methionine requirements of birds up to 10 weeks were found to have been at least 2.15% of the dietary protein (19 to 25%) for the corn-soybean meal type rations containing 42 calories per 1% of dietary protein. If this calorie-protein ratio is 48 to 50 then the methionine requirement as a percentage of protein appears to be increased to 2.3%, he said.

It now has been found that similar corrections can be made for all the essential amino acids by changing the present recommended level by an amount proportionate to the change in the methionine requirement. Optimal proportions appear to be those based on the present NRC recommended requirements for the amino acids. Thus, he said, if the methionine requirement is predicted to be increased from 0.45 to 0.50, then the lysine requirement is predicted to be increased from 0.9 to 1.0.

"With this method it was possible to correlate growth performance with analytical determinations," he said. "A predicted glycine requirement was demonstrated and this amino acid appears to be as deficient as methionine in rations of the corn-soybean oil meal type."

An analysis by three different methods gave values ranging from 2.4 to 3% for the glycine content of soybean oil meal ranging in protein content from 44% to 51%.

"These," Dr. Gordon said, "are much lower than the values reported in the NRC publication 301."

Missouri Research

The methionine and arginine requirements of the young chick were outlined by Dr. B. L. O'Dell, department of agricultural chemistry.

In an experiment with White Leghorn chicks, diets containing purified soy protein at levels to supply

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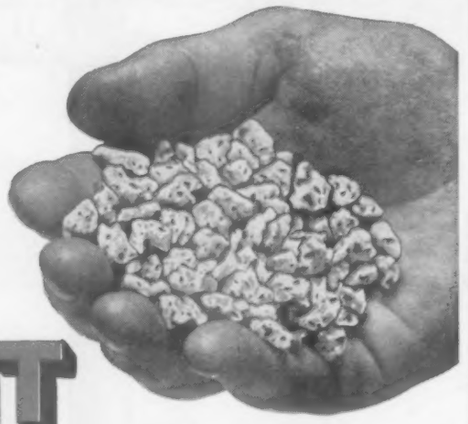

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20, 30 and 40% crude protein were fed.

"Maximum growth was attained at total methionine plus cystine levels of 0.9, 1.2 and 1.3% of the diets, respectively. Calculated on the basis of per cent of the protein, the requirements were 4.5, 4 and 3.25%, respectively," Dr. O'Dell said.

"It may be concluded," he said, "that the sulfur amino acid requirement does increase as the protein content of the diet increases, but not in direct proportion."

Turning to the arginine requirement for S. C. White Leghorn chicks during the first four weeks after hatching, Dr O'Dell said that approximately 2.1% of the diet should be arginine when the protein level is 30%. Creatine and guanidoacetic acid can spare from 0.2 to 0.4% of the arginine requirement. If the diet is adequate with respect to arginine, then supplementary guanidoacetic acid is without effect.

"At all levels tested, supplements of glycine plus arginine supported better growth than arginine alone. The requirement of arginine for maximum growth appeared to be higher in the absence of glycine," he stated.

Are UGF's Amino Acids?

In his discussion of broiler feeding trials, Dr. J. E. Savage, poultry husbandry department, said: "The more I work with unidentified growth factors, the more I believe they are made up of amino acids."

He pointed out that progress in obtaining information about the unidentified growth factors has been slow because of their complex nature.

Flock Replacement

Reporting on systems of laying flock replacement, Q. B. Kinder, poultry husbandry department, said that "a single brood system, using confinement rearing and keeping 60 to 70% of the yearling hens an additional three to four months in temporary quarters offers good possibilities for decreasing labor and increasing profits from layers."

His studies showed that confinement reared birds compared with range reared pullets were slightly heavier at 22 weeks of age (housing time) but that this difference had disappeared after 22 weeks in the laying house. Confinement reared birds matured four days earlier than range reared. Production from sexual maturity to 454 days of age was virtually equal. Mortality rate was slightly greater in birds originally raised in confinement, but this was not sufficient to be significant, Mr. Kinder noted.

From his data he concluded that "satisfactory pullets can be reared in confinement with little if any increased feed cost and a decrease in labor cost."

In another study, Mr. Kinder compared egg production, egg size and mortality rates of floor and caged birds. In each of two studies, 24 birds were used. The two studies showed excellent agreement, he said. "Egg production favored the floor birds 5.3% each year. Egg size favored the cage layers from 3 to 5% each year. There were no differences in mortality rate."

A cooperative poultry management program was outlined by Leonard Voss, poultry extension specialist. Mr. Voss showed with individual examples in the state that if proper management and feeding practices are followed, there is still money in the poultry business.

Lloyd Larson, executive vice president of the Midwest Feed Manufac-

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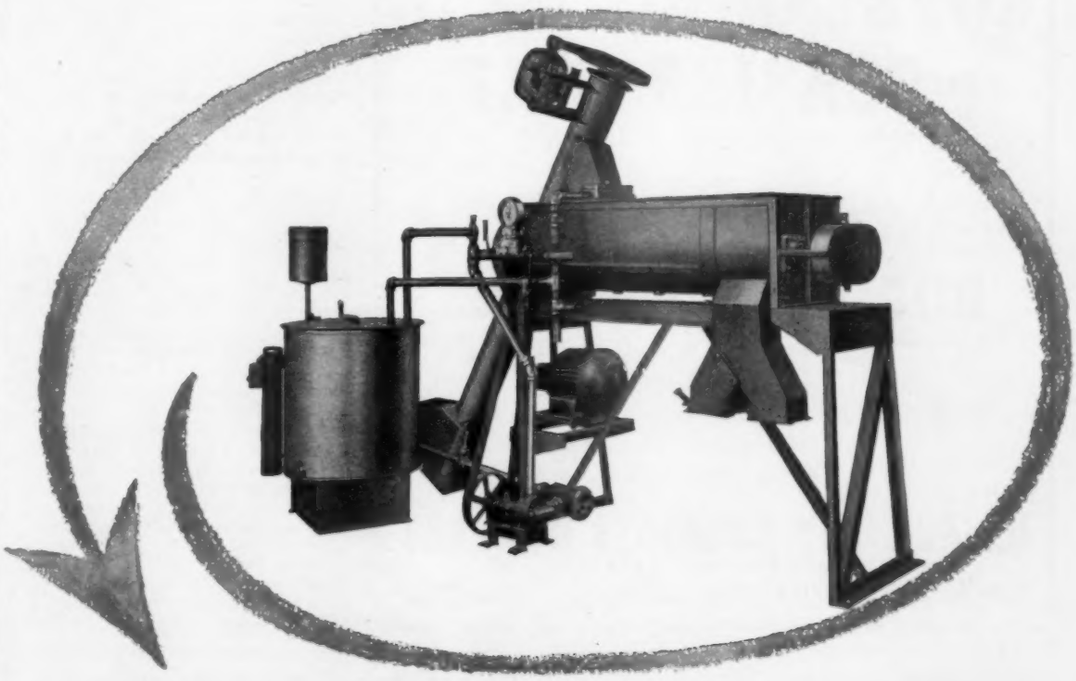

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turers Assn., Kansas City, told about the efforts being made through the Midwest association, extension services and other interested agencies and feed companies in the area to standardize the feeding and management advice being given to the producers, and to concentrate on giving that advice at certain specified periods of the year.

HORMONES: Work done at Purdue University on the effects of female-like and male hormones on the development of beef cattle, sheep and swine was reviewed by Dr. W. M. Beeson, animal husbandry specialist.

"Feeding or implanting female-type hormones—stilbestrol, hexestrol and dienestrol—can increase fattening cattle gains 15 to 25% and improve feed efficiency about 10% when used properly," he said.

In most instances, beef cattle react in the same manner and degree whether the hormone is implanted or fed orally, he said. Implant levels should be limited to 36 milligrams for steers in the fattening lot and 24 mg. for steers on pasture.

Implants are more economical than oral feeding, Dr. Beeson said, since a 36 mg. implant gives the same results as 10 mg. fed daily. Cost of the implant is about 9¢ each plus labor and equipment while oral feeding costs 90¢, he said.

Carcass grade isn't improved by the use of the growth-promoting hormones, he said. Cattle fed or implanted with stilbestrol have more outside fat and less inside fat and marbling than steers receiving no stilbestrol. Hormone treatment produces a heavier animal with more lean and less fat and usually a lower carcass grade.

"Feeding an antibiotic—either Aureomycin or Terramycin—in combination with stilbestrol will tend to increase fat deposition and counteract the depressing effect on carcass grade," Dr. Beeson said.

Fecal Droppings

Fecal droppings of hormone-fed cattle have increased estrogenic activity, he noted. Although pigs following these cattle showed increased nipple development and other such effects, there was no difference in their daily gain compared with those who followed cattle not getting hormones. However, Dr. Beeson said, "until additional data are available, it is not advisable to allow pregnant gilts or sows to follow cattle fed stilbestrol." Also, he noted, boars following hormone-fed cattle will lose their sex drive and become temporarily sterile.

Since such hormones depress and upset the normal male and female body functions, it's recommended that these substances not be used when feeding breeding stock.

However, Dr. Beeson said that preliminary reports indicate that implanting 12 mg. stilbestrol in suckling beef calves or feeding stilbestrol will significantly increase the weaning weights.

Implanting is a relatively simple operation, he noted, and if equipment for holding cattle is available, 100 steers can be implanted in two or three hours. Implanting should be done at the beginning of the finishing period. It will be effective for six months, he said.

In comparing stilbestrol, hexestrol and dienestrol, he said all three are equally effective in improving gains and feed efficiency in beef cattle.

Lambs and Swine

With feeder lambs, Dr. Beeson said that although gains and feed efficiency are noticeably improved by the use of these hormones, carcass quality is depressed to the extent that their use isn't recommended.

Lambs implanted or fed stilbestrol will have an increased daily gain of 10 to 40% and an improved feed efficiency of 10 to 27%. However, Dr. Beeson said that work at Purdue showed untreated lambs graded 95% choice and 5% good while lambs receiving a hormone graded 45 to 74% choice and 26 to 55% good.

In swine feeding, Dr. Beeson pointed out that feeding stilbestrol at 2 mg. daily produced no beneficial effects on growth, feed efficiency or carcass quality of fattening hogs but did produce undesirable side effects.

In another Purdue experiment, carcasses from hogs fed the male hormone methyl testosterone at the level of 27 mg. or more per hog daily, had significantly less fat than carcasses from hogs fed no hormone.

"Male hormones and/or their analogues have a possibility of producing leaner hogs on a practical basis," Dr. Beeson stated. "However, at present the use of male hormones in swine feeding is not practical nor recommended."

Dr. H. Biellier, poultry husbandry department, reported on hormone implants for turkeys. He said that the use of implants compares favorably

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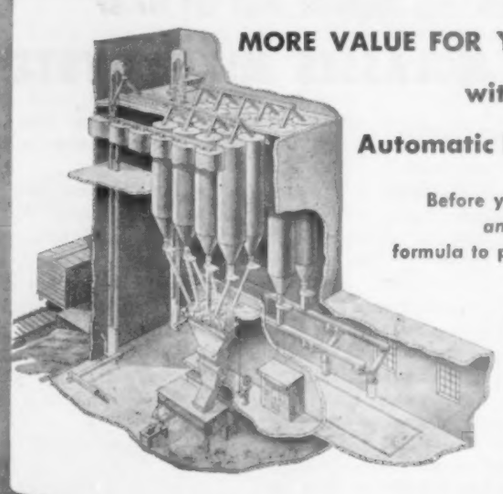

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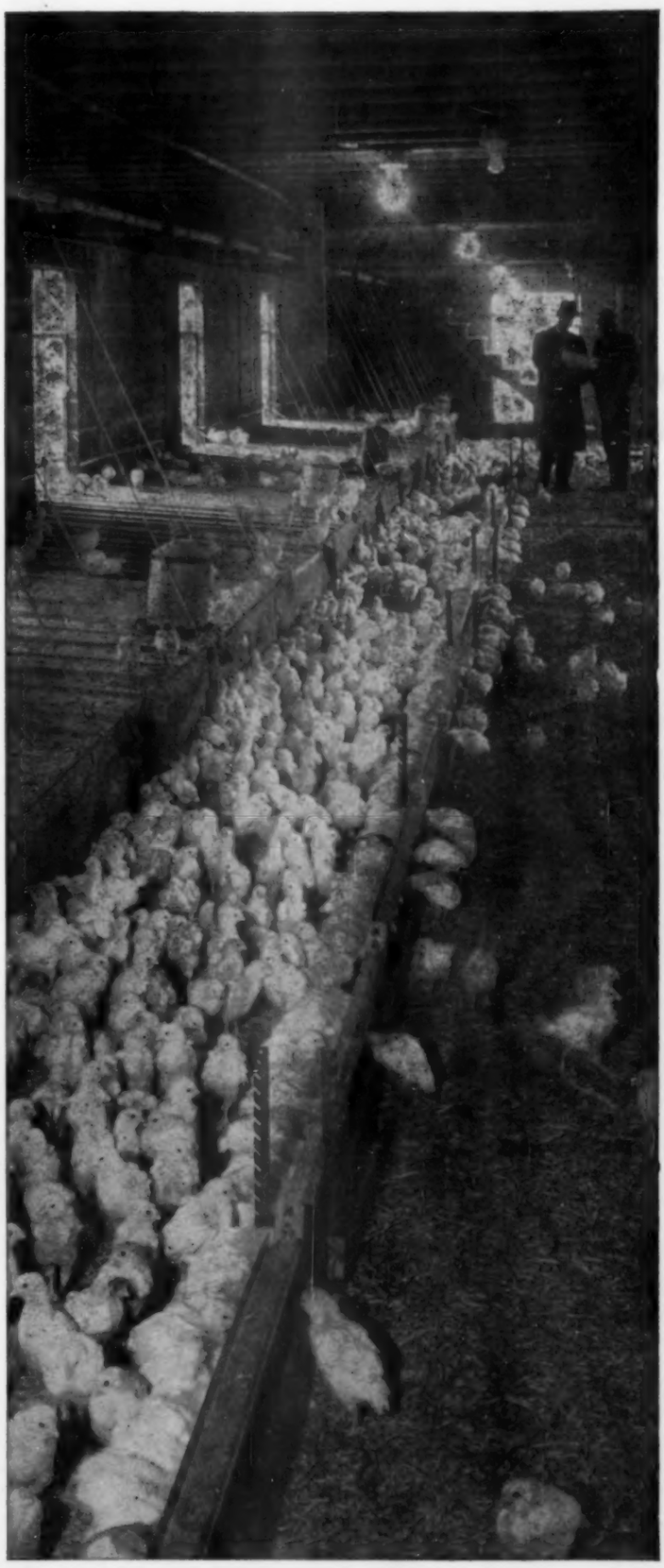

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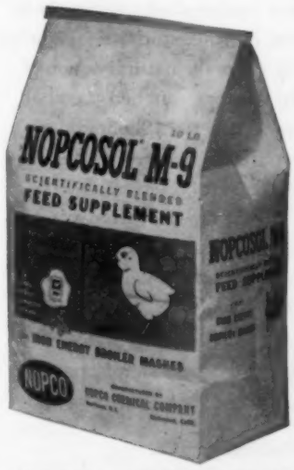

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with using in feed. While his studies indicated that there was no great weight advantage or feed efficiency gained through the use of hormones, there was a distinct improvement in the grade of the turkeys at marketing time. The hormones were used three to four weeks before marketing.

RUMINANTS: The biological control of rumen population was discussed by G. B. Garner, agricultural chemistry department. Mr. Garner listed several general assumptions upon which rumen experiments at the university have been based.

The first was that there are factors in rumen fluid which control rumen population other than the anaerobic condition. Few cases of malfunction of the rumen due to a shift of rumen population have been observed, he said.

A second assumption was that there are factors in rumen fluid and water extract of silage which increase the rate of cellulose digestion. Tests with sheep have shown that low levels of silage extract can increase cellulose digestion while a high level inhibits digestion.

A third assumption listed by Mr. Garner was that the end products of rumen fermentation vary with rations, but on the same ration the end products are essentially constant.

Fourth assumption was that under good ration formulation, the rumen functions at maximum capacity and rate. Therefore, the activity should first be depressed to test new substances. Mr. Garner said it was this assumption that best explains why many compounds look useful based on artificial rumen trials but are not effective in practical trials and in feedlots.

The final assumption, he said, was that by maintaining a system of desirable microorganisms, toxic forages may be utilized in periods of drouth. It has been found that ruminants started early on sudan may be successfully pastured all season while sporadic grazing may result in death loss. Also, dairy cows getting concentrates were not poisoned as often as beef cows in the corn fields of Missouri in 1954.

This, he said, undoubtedly was due to the carbohydrates in the ration causing a shift in the type of flora in the rumen.

Mr. Garner concluded that it seems evident that the control of rumen population for specific purposes such as utilization of a toxic crop is practical.

Non-Protein Nitrogen

"Stockmen have found to their sorrow that there is a limit to the amount of non-protein nitrogen that their ruminant animals can tolerate," said Dr. M. E. Muhrer, agricultural chemistry department. Nitrate has proven to be particularly toxic for ruminants because the nitrate is reduced in the rumen to nitrite which is many times as toxic as its precursor.

Livestock can get nitrate from fertilizers or from water. More often, he said, it is the forage that carries the toxic amount of nitrate. Drouth increases the danger of nitrate poisoning from forage plants.

In an experiment with two lactating cows, 1.25% potassium nitrate was fed in the ration of one and 0.75% to the other. From this experiment, Dr. Muhrer concluded that:

(1) Low levels of KNO_3 will decrease milk production.

(2) 1.25% KNO_3 equivalent may irreversibly decrease milk production.

(3) The effect of .75% KNO_3 on milk production can be largely reversed by the addition of 6% molasses to the diet.

(4) Nitrates in drouth forages may be one cause of decreased milk production. Concentrates are seldom to blame for nitrate toxicity.

Dr. Muhrer said that feed men should:

(1) Not let their feeds take the blame for death or decreased production resulting from nitrate toxicity because the source is usually not the concentrate.

(2) When nitrate is suspected, have the forage and water tested for excess nitrate.

(3) If excess nitrate (above 1% of the forage) is found, dilute or replace the roughage with more desirable roughage.

(4) Increase the readily available

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energy content of the ration (up to 6% molasses) and keep the vitamin A level adequate (4 mg. of carotene per pound of feed) if nitrate troubles are suspected.

Dr. C. B. Knodt, Larro Research Farm, General Mills, Inc., Indianola, Iowa, presented two talks, one on formulating calf starters and one on formulating coarse-textured dairy feeds.

Calf Starters

Dairy calf feeds today are quite simple as compared to what they probably will be in a few years, he said. At the present, milk replacements or prestarters are formulated primarily from dried non-fat milk solids and whey. However in some cases, soybean flour has been found to be a more economical product to use in limited quantities, according to Dr. Knodt.

As the demand for milk products for human consumption increases, there will be an increased use of plant proteins and nutrients for calf feeds, he predicted. "I doubt whether it is profitable to feed milk to a calf now," he said, pointing out that 25¢ worth of prestarter can replace 36¢ worth of milk and do a better job of growing the calf.

Dr. Knodt said it's important to remember that the calf is essentially a non-ruminant until a month old. While efforts have been made to inoculate calves by using cuds of cows, research raises questions as to the beneficial effects of this practice.

"Protein should be carefully considered when formulating milk replacements," he said. "Calf starters should contain 20% high quality protein if they are to perform acceptably under the many conditions they are fed. A 16% protein starter will be adequate if other high protein feeds such as legume hay and milk products are fed."

Antibiotics are generally accepted as essential in these formulas, he said. Both Aureomycin and Terramycin have been found valuable in increasing growth rates and preventing scours. Dr. Knodt said that 40 grams per ton is the desired level. A mixture of penicillin and bacitracin, as well as procaine penicillin, has improved growth rates also, he said. Under certain conditions Streptomycin and chloromycetin have improved growth rates, too.

The question of best texture for calf starters frequently arises and research has shown somewhat varying results, he said. Dr. Knodt said his company believes a combination of mash and pellets is the most acceptable.

Dairy Feeds

In his talk on the coarse-textured dairy feeds, Dr. Knodt said: "When all problems are considered, most grains are best when ground to a medium texture. Careful rolling or crimping improves the appearance of oats and barley and may also improve digestibility of a ration that contains the two grains."

Some dairymen indicate that coarse feeds are eaten in greater amounts with a greater flow of milk resulting. However, the General Mills specialist said, because of the nature of the needed ingredients and their preparation, such a coarse-texture feed usually costs an additional $2 or more per ton of finished feed.

"Palatability is of considerable importance in the production of dairy feed," he said, "but it isn't a limiting factor when high quality ingredients are used and mixed properly." He reviewed research conducted at various universities which pointed up much conflicting data on the subject.

"While some grinding or crimping is desirable, excessively fine grindng increases grinding costs and has decreased milk production of dairy cows

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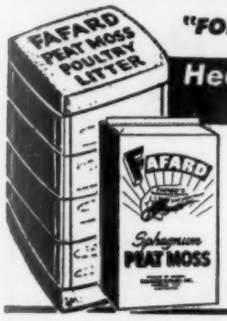

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FEEDSTUFFS—*LEADER in its field*

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by 5.4%," Dr. Knodt told the feed men.

"Too often we make feed for the dairyman instead of the cow," he said.

Dr. Knodt saw a bright future for the dairy feed industry. He urged proper feeding of pasture, hay and silage supplemented with a concentrate.

A concentrate must meet certain requirements, he stated. Protein needs have been revised downward. "Very seldom do we need more than 16% protein in a dairy concentrate." However, he pointed out, there needs to be an improvement in energy content of the feed.

SWINE: The problems of the pork industry were summed up in a statement by S. Zobrisky of the University of Missouri's animal husbandry department: "The industry is growing leaner because of its fatness."

Mr. Zobrisky presented information on carcass evaluation done by him along with A. M. Mullins of the department.

"Carcass evaluation is not easy, especially on a mass scale," Mr. Zobrisky said. However, it is an operation that is important to feeders and breeders so that they can produce hogs with a minimum of fat to satisfy the demands of the consumer.

In their work at Missouri, Mr. Zobrisky said they are working on a number of methods of evaluation. He listed the following:

(1) Visual evaluation of live animal; (2) carcass measurement; (3) blood volume; (4) urine study; (5) X-ray; (6) specific gravity of the animal; (7) sampling technique of one part of the carcass; (8) chemical analysis.

"No method has been developed that is practical on a large scale," Mr. Zobrisky said. Their work is directed toward changing that situation.

"Meat-hog production is primarily a breeding problem and any permanent and lasting improvement in this direction must come through a good breeding program," said Dr. Leland F. Tribble, animal husbandry specialist.

However, feeding and management do have important functions in the development of the fattening hog, he pointed out. By limiting the amount of energy in the diet, the amount of fat on the hog carcass can be altered considerably.

Energy in the ration can be limited by hand feeding or by adding bulk or fibrous material to the ration, Dr. Tribble said.

Missouri research has shown that a more desirable hog carcass can be produced by limiting feed intake to 85% of that of full feed. Limited feeding is most successful if done from the time hogs weigh 125 lb. on until they reach market weight, according to Dr. Tribble.

Many farmers limit feed to pigs but they do it at the wrong end of the feeding period, he said. Pigs are often fed a limited amount of grain until they weigh from 75 to 125 lb. and then they are full fed to market weight—a practice that increases the fat on the carcass.

Although fat has received most of the emphasis in the discussion of the desirability or undesirability of pork, the amount of lean meat—muscle—in a hog carcass is the important item, he pointed out.

The impulse for growth, or muscular development, is great in the young pig, Dr. Tribble said. Full feeding a ration adequate in protein, minerals and vitamins will result in maximum muscular development and, therefore, more lean meat.

Rations that support maximum gains in young pigs will also produce maximum muscular development. As the pig becomes older and the tendency to fatten increases, a reduction in the energy intake will result in the production of leaner hogs.

"However," he re-emphasized, "the most that good feeding can accomplish is to develop the inherent ability of the animal."

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uct in competition with all of the other products after the consumer's dollar. This warning was issued by Dr. D. E. Brady, animal husbandry department.

Today's consumers are demanding a greater amount of built-in conveniences in meat. They also want attractiveness in packaging and display, cleanliness and nutritional safety, variety throughout the year, and top quality at the right price, he said.

"These demands aren't unrealistic," Dr. Brady continued, "as consumers have been willing to pay the prices necessary to get what they want."

With increasing income, there is reason to believe that meat may well hold its present 5 to 6% share of the consumer's expendable income. However, he warned, much depends on how adaptive the meat industry becomes in meeting the changing and more critical demands.

Since the producer actually determines what will be inside the hide and skin, Dr. Brady said, the producer must be the first to start before any real progress can be made.

"Most satisfaction and disappointments that consumers express are clearly related to production management," he said.

MEDICATED FEEDS: A panel discussion brought together several veterinarians with a feed salesman to discuss problems of disease control through medicated feeds. Dr. R. C. Klussendorf, Commercial Solvents Corp., Terre Haute, Ind., moderated the panel. Members were Dr. Dennis D. Goetsch, technical director, Specifide, Inc., Indianapolis; Morton C. Craig, sales representative for Hales & Hunter Co., Boonville, Mo.; Dr. J. C. McCrea, practicing veterinarian at Platte City, Mo., and Dr. C. D. Lee, extension veterinarian, Iowa State College, Ames.

"Medicated feeds are no substitute for good management, sanitation or good feeding," Dr. Lee said. A lot of diseases can be warded off by medicated feeds, but, he emphasized, a proper diagnosis should be made and a history taken before a medicated feed is used.

"We'd like to work with the feed man," said Dr. McCrea, pointing out that in his opinion there is a definite place for a trained veterinarian's diagnosis before a medicated feed is recommended.

Dr. Goetsch also stressed the fact that medicated feeds are no substitute for good animal husbandry. He said that there are some diseases, particularly those caused by viruses, that high-level antibiotic feeds won't help. A trained veterinarian can diagnose the disease and save the farmer money that he might put into a medicated feed that would do no good, he said.

Mr. Craig said that the feed man offers a service to help the farmer, and if he runs across a situation that he knows will be helped by using a medicated feed that the feed man has available, he doesn't see why he shouldn't so advise the farmer. He agreed that when a disease condition is found that puzzles the feed man, he should recommend that a veterinarian be called in to diagnose it.

Only reliable mills should be allowed to mix feeds containing potentially dangerous drugs, he said. He also stressed the fact that the dealer needs to have more information on how medicated feeds should be used.

At the noon luncheon on the second day of the conference, Dr. Robert Spitzer, Murphy Products Co., Burlington, Wis., spoke on the advantages of being an American. He was introduced by Maurice Johnson, Staley Milling Co., Kansas City. Tours of the Missouri research facilities in the afternoon concluded the conference.

Sars, Inc., New Name Of Alabama Company

LOXLEY, ALA.—Sars, Inc., is the new title of the Loxley, Ala., firm formerly known as South Alabama Rendering Service, Inc., announces Robert J. Cummings, vice president.

The company, organized in January, 1955, recently doubled its warehousing space for meat meal and the installation of two tanks with a capacity of 150,000 lb. of stabilized feeding fats is underway.

Alabama Farmers Can Make Hogs Profitable

AUBURN, ALA.—A hog program can be profitable in Alabama if the farmer raises his own grain, grazing and good pigs, claims G. B. Phillips, Alabama Polytechnic Institute animal industry specialist.

Mr. Phillips suggests good pastures for growing and fattening pigs but said it can be done on concrete if the farmer has considerable know-how in feeding and management.

Farmers in Alabama have the natural advantages of climate and a much longer pasture growing season, in contrast with farmers in the Corn Belt, Mr. Phillips said.

Mr. Phillips warned, however, that water should be within 300 ft. of a supplement and shade.

Joins Dannen Mills

ST. JOSEPH, MO. — Robert E. Payne, a rate expert for the Colorado public service commission for the past two years, has been appointed traffic manager for Dannen Mills, Inc., St. Joseph, Mo. Mr. Payne has been associated with the Archer-Daniels-Midland Co. at Mankato, Minn., the Universal Atlas Cement Co., Chicago.

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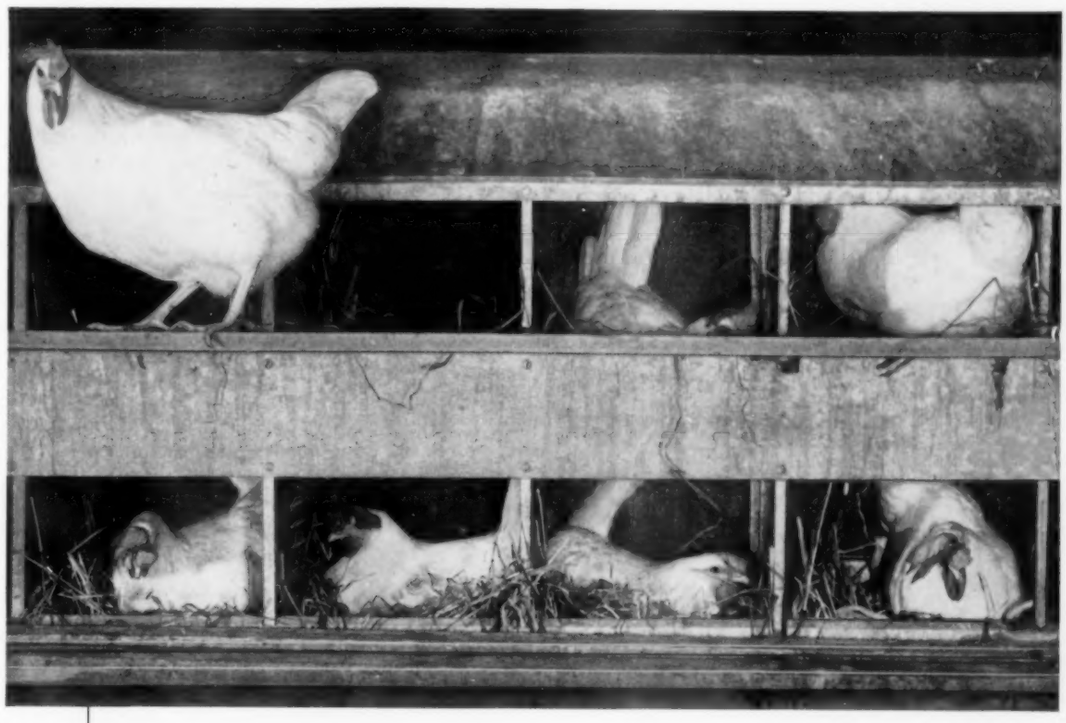

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Corn Production Near Record; Hay, Forage Supplies Critical

WASHINGTON — Total corn and sorghum grain production estimates by the U.S. Department of Agriculture in November were higher than in the previous month. Hay and forage supplies continuesd to be critically low, being below last year in all regions of the U.S. and the lowest of record in several central states.

A slight increase in outturn of late crops during October assures a near-record total crop production in 1956, USDA said in its monthly crop production report. The second largest corn crop of record—highest in average yield per acre—is in sight in the 3,412 million bushel crop now estimated.

Late season drouth reduced soybean prospects from a month ago. Nov. 1 indications point to a crop of 457 million bushels, down about 3% from last month, but still nearly one-fourth larger than the previous record production of 371 million bushels in 1955.

Production of sorghum grain is estimated at 170 million bushels, up five million bushels from last month's forecast, but far below the record 1955 crop of 241 million bushels.

In the Corn Belt, picking was well advanced by Nov. 1 with about 90% harvested in Illinois and Indiana; 80% in Iowa; 75% in Minnesota; and about one-half in Ohio. Late maturing corn that was frosted in September in Ohio and other Lake States, dried considerably during October and relatively few farmers anticipate a wet corn storage problem.

Dryness Causes Picking Losses

Corn harvesting losses were heavy in Illinois, Indiana, Minnesota and Iowa, as stalks were dry and brittle and the low moisture caused extensive shelling by mechanical pickers. Gleaning crews and livestock are salvaging much of the corn left in the fields. Yields in the Corn Belt are at record or near record levels in northern and eastern states but drouth sharply reduced the crop in parts of western Iowa, southeastern South Dakota, Nebraska and northeastern Kansas.

Soybean Prospects Down

Extremely dry weather in September and October over much of the main soybean area dropped soybean prospects from earlier expectations. The dry conditions caused heavier than usual harvesting losses; also soybeans were smaller with fewer beans per pod. Moisture content of the soybeans was extremely low. Harvesting was nearly complete in all the major states by Nov. 1.

Harvesting was well advanced by the end of October in all sorghum grain areas. Yields are somewhat below earlier expectations in Kansas and California, but the declines in these states were more than offset by good outturns from the irrigated crop in Texas. The Texas harvest was completed by Nov. 1 in all districts except in the irrigated High Plains areas where combining had already passed the peak.

Hay and forage supplies in several central states from Iowa and Nebraska southward through the Great Plains country to the Gulf are the lowest of record, beginning in 1937, according to USDA.

In this area, more straw has been saved than usual from rice and other crops and more peanuts used only for forage. Corn, sorghums and other crops have been drawn on heavily for silage and forage. The 110-million ton hay crop, which is only 2% less than last year's record tonnage, is scarce in the drouth sections and lower in quality than usual in northeastern states. Varied crop by-products and field clean-up add as usual to forage supplies.

Farm pastures showed some further seasonal decline during October and on Nov. 1 were the poorest since 1953. Pastures for the country as a whole averaged 58% of normal compared with 61% a month ago and

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Fred O. Church

PROMOTION—The chemical division of Merck & Co., Inc., Rahway, N.J., announces the promotion of Fred O. Church from merchandising specialist in industrial and agricultural chemicals to marketing manager, agricultural chemicals. The appointment is effective immediately. Mr. Church joined Merck in 1935. In 1952 he became assistant to the manager of the general sales department, in which capacity he was concerned with sales to the feed and flour industries. He was made merchandising specialist in industrial and agricultural chemicals in 1954. Mr. Church is a graduate of Williams College, where he majored in chemistry.

73% on Nov. 1, 1955. Early in October, extreme drouth conditions still existed over much of the Corn Belt and extended over the Great Plains and far Southwest. Much of this drouth situation had been eased by precipitation in late October which tended to hold the Nov. 1 condition slightly above the 1934 drouth year.

Pastures on Nov. 1 were generally above average in most of the North Atlantic and South Atlantic states and the Far West.

The 1956 pasture season as a whole was only fair as continuous dry weather over much of the western Corn Belt and central and southern Great Plains areas limited the supply of pasture feed. Pastures for the entire country were the poorest since 1936.

Pastures in some central states were very short and furnished livestock with the poorest grazing in nearly 20 years, while on the other hand, generally good pastures prevailed in most of the northeastern and northwestern sections of the country.

In the North and South Atlantic regions, pastures were generally above average on Nov. 1, and abundant rainfall encouraged late growth of feed. Pasture feed in the east north central states was becoming very short but rains in late October and early November brought some relief to this area. In the western Corn Belt, pastures have been very short all season. Pastures in Nebraska, Iowa, Missouri, and Kansas which were hard hit by drouth continue to be far behind the condition a year ago.

In the southwestern and south central states, pastures continued to be in very dry condition on Nov. 1. Feed prospects have improved considerably in Texas and Oklahoma due to recent rainfall. Wheat pastures in central and lower Plains States were supplying very limited feed due to lack of rainfall.

Seedings of fall grains and forage crops have made good starts or have good prospects in much of the South and East and in the Pacific Northwest but conditions have been too dry for good growth in huge areas in the corn, cotton and wheat belts.

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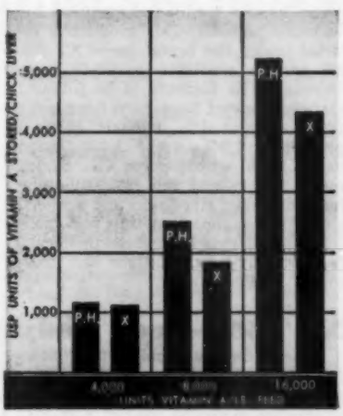

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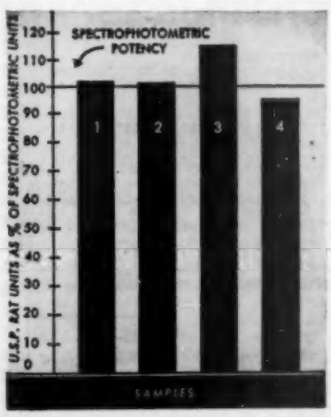

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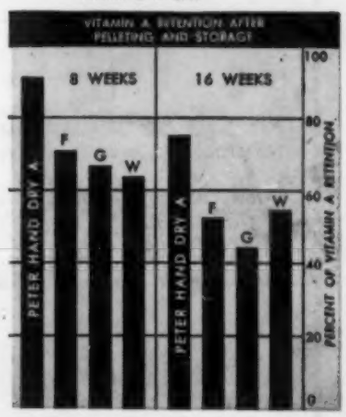

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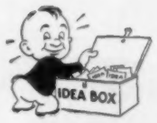

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This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5601—Feed Unloader

The Simonsen Manufacturing Co. announces a new model in its Simonsen Unloader line. The model U6 folds so that it carries below the truck cab door and does not interfere with the operation of the door. The hydraulically powered auger unloads feed in the folded position for self feeders and low bins, and when extended will deliver feed up to 12 ft. high at rates up to 1,000 lb. per minute, company officials state. Secure more complete details by checking No. 5601 on the coupon and mailing it to Feedstuffs.

No. 5598—Display

A new counter display and deal is being offered by the Dr. LeGear Medicine Co. The display carries nine of the company's dog prescriptions and features a supply of dog books offered free to customers. This deal includes: 13 dog worm caps, 13 puppy worm caps, 10 antihistamine tabs, 10 tonic tabs and 10 tape worm tabs, all in self-dispensing units. There are also eight flea and tick powder, seven mange medicine, five flea soap and eight dog shampoo packages. The display is attractively printed and was planned to offer the dealer quantities based on the popularity and country-wide sales records of each item, company officials said. Secure more complete details by checking No. 5598 on the coupon and mailing it to Feedstuffs.

No. 5600—Magnetic Separators

A special eight-page, illustrated agricultural bulletin on the removal of iron trash from livestock and poultry feeds on the ranch or in commercial mills has been published by Cesco. The bulletin gives comparative information and installation data on various types of permanent magnetic separators including ducts, plates, pulleys and drums. Photographs and diagrams of the equipment as used on belts, chutes and various models of choppers combine with text to give an explanation of the uses, efficiencies and limitations of various available methods for the removal of tramp iron from feeds. Secure the booklet by checking No. 5600 on the coupon and mailing it to Feedstuffs.

No. 5595—Diet Fortifiers

The development of two diet fortifiers for chicken and turkey rations has been announced by the Borden Co. They are called by the trade names, Omni-Mix and Omni-Mix B. Omni-Mix is designed for use as a supplement in chicken starters, growers and broiler feeds and turkey starters, growers and finishers. It supplies required levels of fish meal and fish solubles, company officials state. In field tests, it was found that addition of Omni-Mix to a basal turkey starter ration enabled growers to register up to 1 lb. of gain for each 1.71 lb. of feed. The second feed supplement, Omni-Mix B, was developed for use in turkey and chicken breeder rations. It is designed for manufacturing highly fortified diets which promote maximum hatchability and a carryover of essential nutrients to newly hatched chicks. Necessary fish and whey growth factors, plus vitamins and minerals, are combined in a single supplement. Premixing of vitamins and minerals is eliminated. To secure more details check No. 5595 on the coupon and mail it to Feedstuffs.

No. 5596—Fire Detection System

Details of the new Secoalarm fire detection system, designed principally for elevator legs and cupola protection in country elevators, feed and seed houses, have been announced by the Seedburo Equipment Co. The system is recognized by the Mill Mutual Fire Prevention Bureau when properly installed and maintained, Seedburo officials state. Each Fenwall Detect-a-Fire thermostat affords protection for a ceiling area of about 500 sq. ft. Only one thermostat is required for each leg. The function of the thermostat is to complete an electrical alarm circuit, thereby sounding a specially designed Federal RX siren, claimed to have an audibility range of approximately one-quarter mile. Literature on the system quotes specifications of the component parts and their costs. Secure the literature by checking No. 5596 on the coupon and dropping it in the mail.

No. 5597—Cereal Ration

The Pablum Products Division of Mead Johnson & Co. announces the production of "a high protein, vitamin enriched cereal ration prepared especially as a feeding supplement for valuable animals. This product is labeled under the brand name XT No. 58 and is available in 25-lb. containers." The formula is as follows: Oatmeal, wheat flour, corn flour, soya flour, sucrose 4%, tribasic calcium phosphate 1.9%, salt 1.3%, dried yeast 1.2%, wheat germ 1%, barley malt .4%, iodized salt .2%, thiamine hydrochloride, riboflavin and reduced iron. More complete details and price information may be secured by checking No. 5597 on the coupon and mailing it to Feedstuffs.

No. 5599—Feed Body

A new feed body, called the "New-Matic" by its maker, the Baughman Manufacturing Co., comes in truck or trailer mounted models and features all-pneumatic delivery of bulk feed. The unit (model PF-56) has a heavy-duty blower as the source of the pneumatic power that permits feed discharges up to 600 lb. per minute. Automatic delivery can be made, if desired, direct from truck

to high elevation or storage bins by extension of the discharge hose, it is claimed. The discharge tube is air-tight and sealed. Multiple compartments with drop doors prevent intermixing. One-man controls are provided. Both power take off and auxiliary engine models are available. Further information is available by checking No. 5599 on the coupon and mailing it to this publication.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5537—Rodent control unit, Solvit Chemical Co.

No. 5538—Public storage plan for warehousing alfalfa pellets under inert gas pressure, Grain Elevator Warehouse Co.

No. 5539—Stream splitter for dividing single stream of dry, free-flowing material, Sprout, Waldron & Co., Inc.

No. 5540—Booklet on high-level antibiotic feeding, Commercial Solvents Corp.

No. 5541 — Phenothiazine wormer for cattle and sheep, VyLactos Laboratories, Inc.

No. 5542 — "Pallet bag" for "squared-off" appearance, St. Regis Paper Co.

No. 5543—Poultry feed additive, Heterochemical Corp.

No. 5544 — Dauber lid for screw worm smear containers, Dr. L. D. LeGear Medicine Co.

No. 5545—Dairy cattle feeding program, Pillsbury Mills, Inc.

No. 5546—Bulk delivery of molasses feed, Baughman Manufacturing Co.

No. 5547—Vitamin D product for treatment of milk fever in dairy cattle, Silmo Chemical Corp.

No. 5548—Grain shovel devices, Foster & Felter Co.

No. 5549—Counter display for self-service of nf-180 tablets, Hess & Clark, Inc.

No. 5550 — Bulk feed tank with 2½-5 ton capacities, Martin Steel Products Co.

No. 5551—Dog food, Vitality Mills, Inc.

No. 5552—Water tube boilers, Nebraska Boiler Co., Inc.

No. 5553—One-man push button

Send me information on the items marked:

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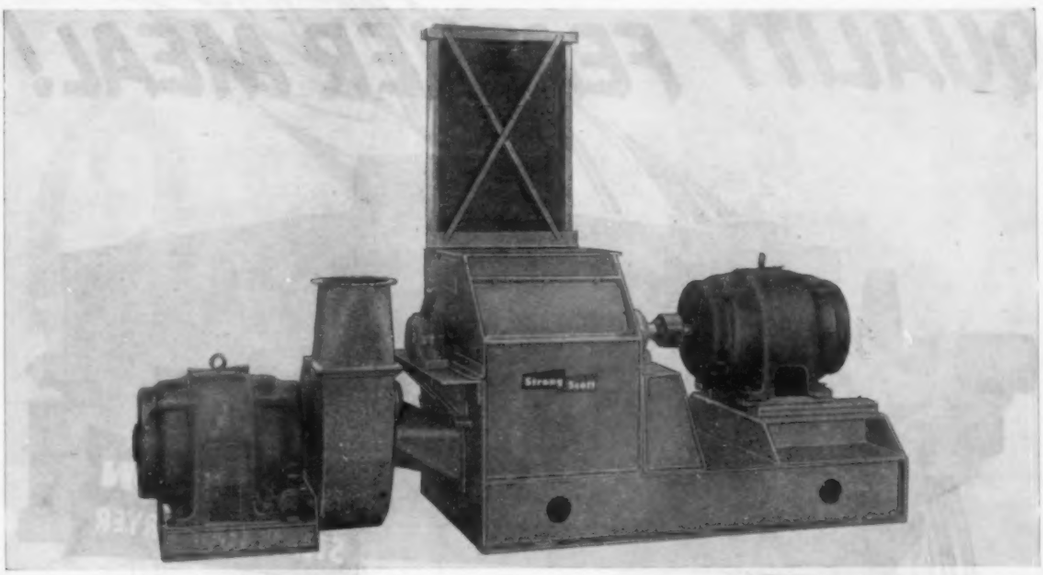

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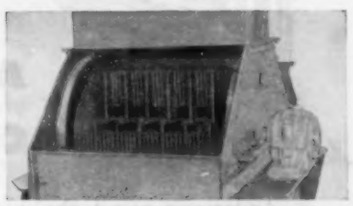

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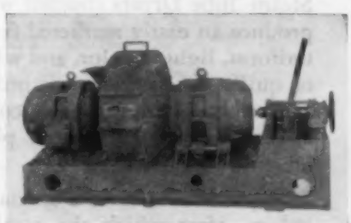

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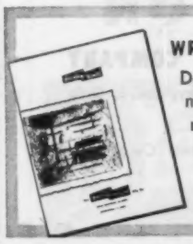

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The Feed Man Must Keep Up With a Changing Market

Economist Tells How Some Farmers Hike Profits in the Face of Lower Prices

The feed man who expects to succeed in these competitive times will have to keep up with the changes taking place in agriculture and will have to do a better job of helping and serving the better farmers.

While many farmers have found their income down and have not been very good feed customers, some farmers have actually improved their profits and their position in the face of lower farm prices. The ways in which they have done it are of interest and significance to feed men trying to do a better job of serving farmers.

These farmers have not necessarily made radical changes in their operations; they have not all gone to large scale commercial-type farming. But they have made substantial adjustments in their operations.

Prof. John C. Doneth of the department of agricultural economics at Michigan State University, East Lansing, told recently how a number of Michigan farmers are making their farms pay today. Thus, he noted in an article in a university publication, it is definitely possible to make a profit from farming today.

Prof. Doneth said this is revealed by farm account books kept by 500 farmers in cooperation with their county agents and the department of agricultural economics at Michigan State. Some of these farmers are not only now making a profit, but they have managed to gradually improve their financial position over the last three to four years.

This is quite remarkable, Prof. Doneth noted, considering what has happened to farm prices and costs generally. Farm prices are down 10 to 50%, depending on the product, compared with three or four years ago, and farm costs are higher. This squeeze is general on all sizes and types of farms and in all regions.

How are some farmers still managing to make such a good showing in spite of this? The answer, says Prof. Doneth, lies pretty much in one word —"change." These farmers all made substantial adjustments in their businesses. No one stood still. These adjustments were of many types and varied from farm to farm.

Prof. Doneth went on to outline some of the changes made by farmers who have managed to maintain or increase earnings over the last four years. Following are excerpts from his article:

More Land Per Man—About one third of the farmers with favorable earnings took on more land. They were able to do this because other farmers took off-farm employment on a full or part-time basis, giving up farming either partially or completely and selling their farms or renting out the land. In most of these cases, the financial position of the family giving up farming was improved and the opportunity for the farmer remaining was expanded. These farmers who took on more land usually did so without increasing their labor supply.

An example was a farmer operating 160 acres of cropland in 1952. Since then he has taken on another 40 acres, giving him 200 acres of work land. His dairy herd has increased from 22 to 29 cows, but the labor force stayed the same. Another operator increased his tillable acres from 65 to 100 and expanded his dairy herd from 16 to 20 cows with the labor force staying the same.

The additional land and livestock with the same labor supply increased labor efficiency per man about 40% on each of these farms.

Better Crops—Most of the higher-earning farmers did not increase acres but rather changed the business on the farm land they already owned. This often started through a better land use program and the growing of higher valued crops. On general farms, it meant more corn and, usually, wheat up to the limit allowed by the government. Acreage in forage crops did not increase, but the kinds of forage crops raised were changed so that more legumes were raised.

These farmers also noted that crop yields of a few years ago are not satisfactory now; they further realize that today's yields will be too low tomorrow. All were having their soil tested. They limed if it were needed. Some doubled their yields through tiling. Others doubled theirs by irrigation. Use of commercial fertilizer was generally stepped up considerably.

Better and More Livestock—Some of the farmers did a remarkable job of increasing livestock production rates, which more than offset the decline in prices received.

Milk sales per cow of $400 to $450 (even at $4 prices), egg sales per hen of $7 to $9, eight to nine pigs weaned per litter, and 110 to 125% lamb crops were the levels of production sometimes reached.

Farmers tended to specialize more in their programs. Those with two, three or four different kinds of livestock often cut out one or two of the smaller enterprises but expanded the major one or two to the limit. The size of the major enterprise on a number of farms seemed to increase at about the same rate as prices decreased; the result was often that total farm income stayed about the same. In just about every case, the amount of labor that did the work before continued to do it now.

Nearly every high-income farmer increased his total livestock load. The pattern of livestock production rates varied considerably. One farmer raised average milk sales per cow from $310 on 16 cows in 1953 to $372 on 16 head in 1955.

On the other hand, there were dairymen who let their milk sales per cow drop even more than could be

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accounted for by the price drop. One farmer's figure dropped from $441 to $300 per cow. Another's dropped from $463 to $359. Farmers explained that this occurred as they increased herd size, sometimes changed methods of handling the herd, and reduced rates of grain and supplement feeding.

Adequate Facilities—The farmers found it important to do the job right and quickly when it needed doing. Generally, they found that enough power and good equipment, along with satisfactory and well arranged buildings, saved labor—usually the highest cost item. As farmers increased investments in power, machinery and buildings, the labor bill stayed the same or increased only a little, but more land was farmed or more livestock was carried. About $50 investment in power and machinery per crop acre seemed average on good farms, although this varied all the way from $24 to $78.

Lower Costs—It is very difficult to reduce total farm costs, but most of these farmers did reduce costs of producing each hundredweight of milk, pork, beef or mutton, each dozen eggs, or each bushel or ton of crops. This usually came about through a substantial increase in output and income from the farm business, with total investments and costs usually increasing but at a slower rate.

Labor was an item that often did not increase or, sometimes, was cut. There were a few farmers who shifted out of dairying and into steer feeding to reduce labor costs and keep from investing more in buildings. There were those who stayed in dairying but handled more cows through self-feeding of hay and forage and less handling of manure. Better forages and higher yielding crops helped reduce feed costs, and better feeding methods, especially in more economical use of grain and protein supplements, saved dollars.

One farmer met the price-cost squeeze by increasing his dairy herd from 24 to 35 cows but holding every other major item of cost the same.

More Efficiency—One of the best ways to measure efficiency is the relationship between output or income, compared to input or expenses. These farmers took in about $5 of income for each $4 of total expenses three years ago; they are now taking in $6 of income per $4 of expenses. This really amounts to doubling net income.

Another measure of efficiency and balance is amount of gross income taken in per man. The gross income per man on these successful farms went up from $8,500 to $9,000 per man three years ago to $10,500 to $11,000 now. One out of three of these farmers now has a gross income of $13,000 a year.

Thus, it can be seen that there are many things involved in making a farm pay today; even more things will be involved tomorrow. The successful farmer will not only be highly receptive to change, but must be very alert to see that the changes are the right ones for his farm.

To this might be added the fact that the successful feed man also must be alert to changes, and must do a better job of serving the changing farmers.

James Fish Named GMI Vice President

MINNEAPOLIS—James S. Fish, director of advertising for General Mills, Inc., has been elected a vice president of the company by the board of directors.

Mr. Fish joined General Mills in 1938. He served in the premium section of the advertising department until 1941, when he moved to the grocery products advertising staff. After military service he became advertising manager for home appliances in 1946. In 1954, he was appointed assistant director of advertising. He became director of advertising in June, 1955, upon the retirement of S. C. Gale.

Born at Mt. Pleasant, Iowa, in 1915, Mr. Fish attended Custer County High School in Miles City, Mont. He was graduated from the University of Minnesota in 1937 and later took graduate courses in business administration at Northwestern University.

MISSOURI SPEAKERS—Among the persons who spoke during the recent Missouri Feed Conference are those shown in the two pictures above. Those in the left picture (left to right): Dr. H. M. Scott, poultry husbandry department, University of Illinois; Dr. Richard Gordon, Monsanto Chemical Co., St. Louis; Dr. J. E. Savage, poultry husbandry department, University of Missouri, and Dr. B. L. O'Dell, agricultural chemistry department, University of Missouri. Right picture, left to right: Q. B. Kinder, poultry husbandry department, and G. B. Garner, agricultural chemistry department, University of Missouri; Lloyd S. Larson, executive vice president, Midwest Feed Manufacturers Assn., Kansas City; Leonard Voss, poultry extension specialist, and Dr. H. Biellier, poultry husbandry department, University of Missouri.

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ONE MODEL S-14 PORTABLE ELTON Bag Conveyor, used. Chantland Manufacturing Co., Badger, Iowa.

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WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

FOR SALE — HORIZONTAL TON AND half size feed mixer with 15 H.P. motor in operation now. Priced to move—write or phone, German Valley Farmers Grain Co., German Valley, Ill.

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FOR SALE—ENCLOSED MOTORS, RICHardson Scales, truck scales, hammermills, oat crimpers, horizontal and upright feed mixers, sewing machines, elevator legs, screw conveyors, molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE—SPROUT-WALDRON 336 CU. Ft. (12,000 lb.) horizontal ribbon dry mixers; S-W type 3036 swing head blender with 50 H.P. motor; 4'x30', 6'x30', and 6'x50' rotary steam tube dryers; 3'x24', 4'6"x40', 5'6"x30' rotary hot air dryers. Hammermills, pulverizers, attrition mills, etc. Perry, 1403 North 6th Street, Philadelphia 22, Pa.

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WANTED TO BUY FEED MILL IN EASTern Iowa or northern Illinois capable of producing 10 to 20 tons per hour. Please give full particulars. Address Ad No. 2172, Feedstuffs, Minneapolis 1, Minn.

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FEED SALESMEN NEEDED FOR EASTern Indiana and central Ohio territories. Excellent opportunities with a progressive feed company offering top quality feeds competitively priced. Efficient service to our customers. Write Box 37, Cincinnati 32, Ohio.

SALES REPRESENTATIVE TO TRAVEL Illinois, Missouri and Iowa. Experience in selling feed manufacturers and jobbers in this territory desirable. Must have late model car and be willing to travel extensively. Air mail application giving details of experience, qualifications, age, family status and references to Mayo Shell Corp., Box 784, Houston 1, Texas.

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WANTED—MAN WITH EXPERIENCE IN the feed industry in management, nutrition work or top line sales. To work with established company selling complete line of commercial feeds and concentrates. Location in the Midwest within 150 miles of Chicago. Please state qualifications, salary range expected and personal data in first letter. Address Ad No. 2186, Feedstuffs, Minneapolis 1, Minn.

WE NEED AGGRESSIVE FEED SUPPLEment salesmen—territories open in Illinois, Missouri and southeastern Iowa. Also Indiana, Michigan and Ohio. You should be familiar with feed manufacturers, dealers and feeders in the area. Write giving us your background and experience. Interviews will be held in the territories concerned in December. Address Ad No. 2219, Feedstuffs, Minneapolis 1, Minn.

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YEAST MINERAL SUPPLEMENT COMpany wants man to work out of Ft. Worth warehouse selling directly to feed mills and feed mixers. Also retail feed stores in Texas and southern Oklahoma. Salary plus expenses plus bonus set-up. Position open Dec. 3. Write giving complete information and past experience. Address Ad No. 2224, Feedstuffs, Minneapolis 1, Minn.

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GENERAL SALES MANAGER — OVER twenty years' experience in feed sales and advertising management. Now employed by nationally known firm, but am seeking challenge and opportunity, regardless of present size of your business. Write Ad No. 2215, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.

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2	64.00	67.00	75.80	2	70.00	85.00	98.00
3	74.00	75.00	89.00	3	101.00	104.00	125.00
5	85.00	89.00	112.00	5	112.00	125.00	159.00
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5	.....	39.00	.....	40	155.00	155.00	190.00
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Record World Corn Crop in Prospect; U.S., Soviet Union Show Big Increases

WASHINGTON — Indications are that a record world corn production figure will be established in 1956-57, according to preliminary information available to the Foreign Agricultural Service.

Although it is too early for reliable indications of production in some areas, especially in the Southern Hemisphere where planting is not completed in all countries, the present outlook is for a world production of about 6.5 billion bushels, states the FAS. A crop of that size would exceed the previous record of 1955 by 260 million bushels and would be 1,245 million bushels above the 1945-49 average.

The bulk of the increase over 1955 was in the U.S. and the Soviet Union. A near-record harvest in the U.S. brought this country's production 127 million bushels above the large 1955 outturn. Record carry-over stocks on Oct. 1 bring total supplies of corn to the highest level of record. Corn production in the Soviet Union was at an unprecedented high level, according to available information and may be significantly above the previous record harvest in 1955.

North American Production Up

Corn production in North America is estimated at 3,625 million bushels, 150 million bushels above the total for 1955. The current estimate has been exceeded only by the record outturn for this area in 1948 when the U.S. corn crop was at an all-time high. The U.S. harvest for 1956, now estimated at 3,369 million bushels, though 127 million bushels above the 1955 production is 236 million bushels below the 1948 record. For the current season, production in the U.S. represents about 52% of the estimated world total. Production is at an unprecedented high level in Mexico, the second producer of importance in this area. Canada's crop is very small, only 24 million bushels of corn for grain, according to a recent official estimate. This is about 23% below the record crop in Canada last year.

Europe's corn production is down significantly from the record outturn in that area last year. The bulk of the decline is in the Danube Basin countries, where reports indicate unfavorable weather has made significant reductions in yields, especially in Rumania. Reductions in Western Europe, mainly in Spain and Italy, were largely offset by a larger crop in France, due to a substantial increase in acreage in that country. Yields were sharply below France's high 1955 average.

Soviet Acreage Higher

Corn acreage in the Soviet Union was increased sharply again this year, according to official reports to the FAS. Increased interest in growing this crop is reflected freely in official Soviet pronouncements and press statements. Indicated levels place corn acreage this year at 4-5 times the prewar average. As yet, it is not possible to estimate with any certainty the proportion of the planted acreage that will be harvested as grain. It is recognized, however, that substantial parts of the total are utilized as silage and as green forage.

Asia's Crop Larger

On the basis of incomplete reports Asia's corn production this year is slightly larger than 1955 and well above average. Expanded acreage in a number of countries, especially India, the Philippine Republic and Turkey accounts for most of the increase over earlier average periods. The tentative estimate of 725 million bushels for 1956 is 14% above the prewar average (1935-39). Present estimates for this late crop are subject to considerable revision since the crop is still being harvested in many countries and official estimates as to actual harvest results are not yet available.

Corn production in Africa is tentatively estimated at 335 million bushels, very little change from the above-average crop of 1955. Early season estimates for Africa, however, are based on less information than is the case for Northern Hemisphere areas, since about half of Africa's total is produced in Southern Hemisphere countries where planting is only now underway and where growing condition up through the first quarter of 1957 will determine actual outturns. The corn harvest becomes general in April in most of these countries.

Corn is harvested in South America at about the same time as in South African countries, and early-season forecasts included in the world total are subject to same reservations. Present indications point to a crop about at the 1955 level, which was somewhat below the 1935-39 level. A sharp reduction in Argentina's acreage accounts for the reduction.

Corn is of minor importance in Oceania, and recent crops have averaged only about five million bushels. This compares with 7.5 million bushels in 1935-39. The decline is due to reductions in Australia, the principal producer of the area. Acreage in that country has declined to about 60% of the 1935-39 average.

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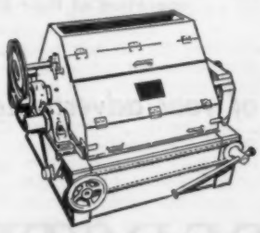

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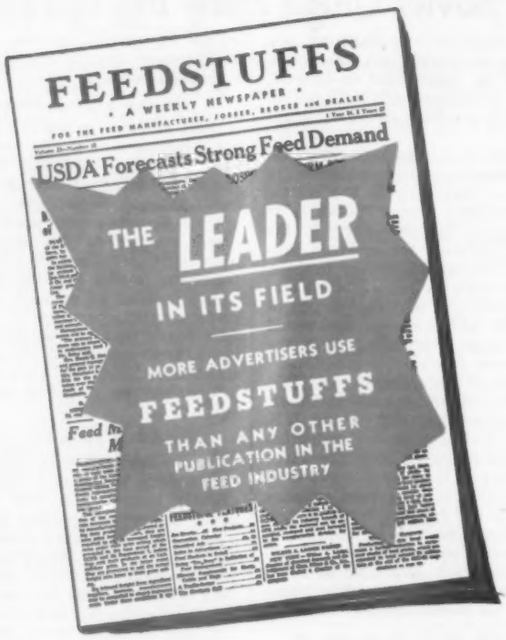

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Milk Cow Numbers to Remain Stable; Output Increase Seen

WASHINGTON — The number of milk cows in the U.S. will remain stable in the year ahead, but, with the rate of output per cow continuing to rise, milk production probably will show another increase, the U.S. Department of Agriculture predicts in surveying the dairy outlook for 1957.

Thus, it appears, the market for dairy feeds will not change in the sense that numbers of milk cows will change. However, the increased specialization in dairy farming, with fewer but larger herds, and the increasing milk output per cow provide a potential for more and better feed service to dairy farmers.

USDA looks for milk production on farms to rise to 129 or 130 billion pounds next year, compared with a little more than 127 billion in 1956.

Price Picture

No marked change in the price picture is now indicated. Prices to farmers will be at present levels, allowing for seasonal variation, through at least March, 1957, the end of the current marketing year. Prices in 1957-58 will be influenced by the level of supports still to be announced. Cash receipts from dairy products in 1957 probably will rise to a new high, but higher costs on some items may result in little change in net returns.

In the past several years, prices to farmers for milk have shown a smaller net decline than some alternative products and now are a little above average in relationship to prices of hogs and dairy rations. Supplies of both concentrates and roughages are large relative to the number of cattle and other livestock but are not as well distributed among regions as last year.

Nevertheless, says USDA, with comparatively favorable price relationships, improved average quality of cows and improved feeding and other practices, the rate of milk output per cow in 1957 probably will increase beyond the 6,000-lb. average of 1956. Further significant annual increases are likely for several more years, too.

As a result, even though the number of cows probably will remain stable, total milk production is likely to increase for some time, barring widespread adverse feed and pasture growing conditions.

The increased population will consume more milk products next year, but output will still be large enough so that the government probably will continue, under its support program, to buy dairy products at a rate equal to this year.

With supplies of milk pressing on available outlets for the foreseeable future, USDA says, it is not likely that there will be any general upward trend in dairy prices. However, it is pointed out, there is considerable evidence that many dairymen can revamp their operations in a manner to permit greater returns to labor and management. At present, returns are relatively low for many dairy farm operators.

Offsetting Trends

In connection with milk cow numbers, USDA notes that the recent near stability in numbers is the net effect of two nearly offsetting tendencies. On the one hand, technological advances are enabling and, in fact, forcing many dairy farmers to expand their scale of operations. At the same time, because such expansion usually requires more capital expenditures, some farmers are discontinuing dairying. The number of farms with milk cows apparently has decreased about 4% a year since 1950. At the same time, on specialized dairy farms in various areas, cash receipts from dairying have increased.

In this connection, USDA points out that the trend toward larger but fewer dairy farmers, which has been going on for the past 15 years, has speeded up in the 1950's, and it is likely to continue for some years ahead.

As part of the dairy outlook, USDA also notes that milk production is continuing a regional shift. The rapid growth in population in urban areas has resulted in a significant increase in milk production in these areas. For example, output in coastal areas has increased both in absolute volume and as a percentage of the U.S. total. In central areas, meanwhile, production has declined slightly, and the region's share of total output has dropped significantly. Associated somewhat with the shift of regional pattern of production has been a change from sale of farm-separated cream to the sale of whole milk.

LIVESTOCK

(Continued from page 1)

cattle and calves are being slaughtered as produced. The January, 1957, inventory of cattle probably will be either a little more or a little less than a year earlier.

Not only are inventory numbers about stationary, but the factors that influence them are essentially static. Cattle prices are neither high enough nor low enough to force much change. The financial position of producers is still strong, but deteriorating, at least in some areas. While cattle numbers may be cut in the worst drouth areas, they are being increased about as much in other regions. Another year of drouth could turn numbers down.

The basic productive capacity of the nation's cattle herd, the number of cows it contains, also is about steady. Little change in cow numbers seems to be taking place.

Meanwhile, USDA notes that following experiences the past year with heavy cattle, producers and feeders have been avoiding holding cattle for a long time to heavy weight. The trend now is to rapid turnover. A recent cattle report showed a sharp gain in short feeding.

USDA says this rapid turnover may continue for some time, though it will gradually diminish if stable prices for fed steers and wide price spreads between grades persist. The January, 1957, inventory will be held down largely by fewer older, heavy steers on hand. Rapid selling at lighter weights would result in smaller beef output in 1957 even though the same number of cattle should be slaughtered as in 1956.

More cattle may be on feed, USDA says. The number on feed Oct. 1 in principal states was up 1% from the large number a year before, and big inshipments to the Corn Belt before and since that date suggest that a great many more are on hand though not yet on feed.

Feeding for market has expanded most in the dry Southwest, with much of the increase forced by lack of grazing.

Total slaughter for all classes in 1957 may be about the same as the 40.4 million for 1956, but lighter weights are indicated, reducing total tonnage of beef. A larger part of steer and heifer slaughter in 1957 may be of fed animals. Less of the 1957 output of fed beef will probably come in early months and more later because many calves are being put on feed.

USDA says prospective supplies afford little hope of a major cyclical recovery in cattle prices during 1957, but prices may stay above the lows of early 1956.

Prices of choice and prime steers will probably be seasonally lower this winter than at their seasonal high in early fall. They might prove fairly stable for several months thereafter, staying higher than at the same period of 1956. It is less certain that prices will remain higher later, for prospects don't suggest a rise next summer equal to the sharp uptrend this past summer.

HOGS: With pig crops down in 1956, hog slaughter in the first part of 1957 will be lower, and prices of hogs are likely to advance during the winter and for much of the coming year to be generally the highest since 1954.

The 1957 spring pig crop may be almost as large as that of 1956.

The hog-corn price ratio this fall has been low enough to make an increase in total spring farrowings appear unlikely. On the other hand, the smaller than usual decline in prices of hogs so far this fall has made producers more confident. Also, the corn crop is the second largest on record. Accordingly, there is a strong possibility that by the middle of the spring season, farrowings will be back to their 1956 number, and the season total may be close to that of 1956.

As slaughter this winter drops farther below last winter, prices will likely advance and be much above the depressed prices of early 1956. The higher level will continue, except for seasonal fluctuations, during most or all of 1957. The increase in price over that of 1956 could be substantial because prices have become very responsive to even small changes in supply.

If the 1957 spring pig crop turns out to be a little less than in 1956 or at most only slightly more, prices for hogs raised from it would probably be at least as high as those from 1956 spring pigs, and perhaps somewhat higher.

SHEEP AND LAMBS: Sheep numbers, like cattle, are "going nowhere fast," USDA says. Production and disposition are nearly in balance, and no sizable change is in view.

In sheep, even more than in cattle, a relocation between regions is in progress. While the U.S. total number has been stable, there has been a shift from West to East. Drouth in some areas has reduced inventories in those sections.

Sheep and lamb prices in 1957 offer good hope of retaining the gain they made in the spring of 1956.

POULTRY

(Continued from page 1)

farms Nov. 1 was down 1% from a year earlier, and this percentage relationship, or one close to it, probably will continue until mid-year 1957. After mid-year, of course, the size of the laying flock depends on the number of replacement chicks hatched in the spring of 1957.

It now looks as though the number of replacement chickens raised in 1957—and the potential market for starter and grower feeds for these birds—may fall a little below the 472 million birds raised in 1956. In connection with replacement chicks, it may be noted that, with improving husbandry practices, an increasing proportion of the replacement chicks is likely to be hatched in February or earlier.

With incomes and employment expected to continue high, consumer demand for eggs and poultry meat will continue about the same as in recent years. However, demand for storage eggs next spring may be weaker.

Average egg prices in the next few weeks are likely to be lower than in September and October. The year 1957 is likely to open with lower egg prices than prevailed a year earlier. The average price received by farmers for eggs in 1957 is expected to be a little less than the 38¢ annual average price now in prospect for 1956. Prices will be lower in the spring than in the same months of 1956. However, prices in the summer and fall may be near 1956 levels since production after late summer will not likely be up much from the 1956 record level.

The trend toward more specialization in egg production tends to reduce shifting to other farm enterprises and thus tends to hold up laying flock replacement even when egg prices are unsatisfactory to producers.

BROILERS: USDA figures that broiler production in 1957 will be at least as large and probably larger than the record total in 1956. Though 1956 output has not yet been officially estimated, placements in the 12 months ending September, 1956, were 23% above a year earlier. Production in 1955 was 1.1 billion broilers.

Several factors — involved in financing and the organization of the industry—will tend to hold 1957 broiler production up to or above the 1956 output, despite disappointing returns during the entire year 1956.

A continuation of record volume broiler output would likely result in prices to farmers in 1957 averaging not much different from the 20.2¢ lb. U.S. average for the first 10 months of 1956. USDA says prices may rise slightly above those of the last few months.

USDA notes that financing programs have tended to maintain or increase broiler production, and now vertical integration—with the various functions of producing, feeding and marketing poultry combined or coordinated — is seen as an even greater force than financing so far as continued high production of broilers is concerned. Even though broiler prices continue near "costs" of production, integrated firms are likely to remain in production to the limit of their financial returns.

Production is considered likely to remain practically at the point at which increased supplies cause prices to exceed production costs by only a small margin.

TURKEYS: The government experts indicate that turkey production in 1957 probably will top the 1956 record of 75 million birds. Though production of light breed turkeys will probably follow the downward trend of recent years, early indications point to a further increase in output of heavy breed birds.

It's noted that farmers holding turkey breeder hens of the heavy types reported intentions to keep 16% more such birds on Jan. 1, 1957, than a year earlier. Even if tempered considerably, these intentions indicate a larger supply of hatching eggs and poults in 1957 than in 1956. Since turkey raising is encouraged by financing, output will tend to be sustained above levels that would be supported by growers' other credit resources.

A larger proportion of the crop than in 1956 will be heavy breed turkeys, particularly white feathered heavy breeds, which can be slaughtered at light weights.

Any marked increase in production would likely depress 1957 prices below current levels, USDA says.

Despite a small storage carryover and a government buying program, the 1956 crop sold at farm prices generally about 5¢ lb. below fall prices of 1955.

Turkey prices through late summer 1957 probably will remain sharply below a year earlier. After late summer of 1957, however, prices may almost equal the corresponding monthly prices of 1956; prices declined in late 1956.

POULTRY INCOME: Total value of farmers' sales of all poultry products combined in 1957 may be a little higher than the $3.2 billion estimated for 1956 because increases in volume and in broiler prices may more than offset lower prices for eggs and turkeys.

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THE FEED MARKETS

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Demand — Supply — Trends — Prices

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Boston: Demand fair; supply adequate; 600 D, 1,500 A 18¢ lb.; 300 D, 2,250 A 20¢; 300 D, 1,500 A 17¢; 300 D, 750 A 15½¢.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢, 3,000 A 20@21½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Minneapolis: 10,000 A 38¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 19½¢ lb.; 300 D, 750 A 17½¢ lb.

Chicago: Demand fair; supply plentiful; straight A feeding oil, with 10,000 units vitamin A per gram 7½@9¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Seattle: Demand slow; trend easy; supply sufficient; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

ALFALFA MEAL

Kansas City: Demand fair to good, with some reports that mixers are backing away from higher prices; trend firm; supply tight; 17% protein dehydrated alfalfa meal with 100,000 units vitamin A guaranteed on arrival $60@62.50 Omaha,, $62.50 Kansas City, sacked; 18% protein 125,000 units A $65.60; 100,000 A pellets $58.50, bulk; non-guaranteed A meal $54 Omaha, $56.50 Kansas City, sacked; suncured—improved demand said to be because of relation to dehydrated in price, price softer; No. 1 fine ground $46@47, sacked; No. 1 ¼-in. $42@45, No. 2 ¼-in. $42, sacked, Kansas City.

Minneapolis: Market firm, with demand moderate. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $67.25, granules or oil treated $66.25, bulk; 18% dehydrated, 125,000 units of vitamin A guaranteed $70.25, granules or oil treated $68.25, bulk.

Chicago: Demand slow; supply tight; 17% dehydrated, with 100,000 units vitamin A guaranteed $67@67.50; 17% with no A guaranteed $60@61; 13% suncured $51.

Seattle: Demand slow; trend steady; supply good; 15% protein suncured $45 ton, delivered carlots; 136,000 A unit dehydrated $68 ton, delivered carlots.

Los Angeles: Suncured — Demand adequate; trend steady to unchanged; supply good; dehydrated—supply scarce; 15% suncured $43@43.50; 17% dehydrated $56@57.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $71.15@73.65; 17% dehydrated, no A $66.15@68; 13% fine suncured $39@56.

Philadelphia: Demand dull; supply light; 17% dehydrated $75.

St. Louis: Demand fair; trend firm; supply adequate; dehydrated, 17%, 100,000 A $65.50 ton; suncured No. 1 fine ground, 13% $52 ton, f.o.b. St. Louis.

Portland: Demand slow; supply ample; trend unchanged; 15% suncured $45, delivered Portland; 15% suncured $45, f.o.b. California; dehydrated $55, f.o.b. California.

Buffalo: Demand and supply fair; trend higher; $79, sacked, Boston.

Omaha: Demand improving; supply amply; 17% dehydrated, 100,000 A, papers or burlap, immediate or December $60, Omaha.

New Orleans: Demand good; trend higher; supply limited; 17% dehydrated, vitamin A guaranteed $72@74.50; non-guaranteed $65@67; pelleted $70@72; 15% $62@64.

Boston: Demand good; supply adequate; dehydrated, 17% $72@74; suncured, 13% $55.90, nominal.

Ft. Worth: Demand good; supply limited; California origin meal or pellets, truck $67, delivered Ft. Worth; suncured: South Dakota No. 1 13% protein, ¼-in. grind, rail shipment $52, prompt; Colorado: No. 1 $52, delivered Ft. Worth, truck.

Denver: Demand slow; trend steady; supply short; 100,000 A, 17% $60.

ALFALFA PELLETS

Omaha: Demand improving; supply ample; 17% dehydrated, 100,000 A, bulk ¼-in. pellets $57, Omaha.

Denver: Demand slow; trend steady; supply short; 100,000 A, 17% $63.

ANIMAL FATS (STABILIZED)

Ft. Worth: Demand good; supply sufficient; prime tallow, tank cars, 7¾¢ lb.; drums 9¾¢, f.o.b. north Texas packing plants, with returnable drums.

Denver: Demand good; trend steady to strong; supply adequate; prime tallow 7½¢.

Kansas City: Demand excellent; trend higher; supply adequate; prime tallow 7⅝@7½¢ lb.; bleachable fancy yellow 7½@7¾¢ lb.

Chicago: Demand and supply fair; bleachable fancy tallow, tank truck or carlots 7⅝¢ lb.; yellow grease 6¾¢.

Louisville: Demand fair to good; trend strong; supply normal; bleachable white 7⅞¢ lb.; white tallow 7½¢ lb.; yellow grease 6½¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; bleachable fancy tallow 7¢; yellow grease 6¼¢.

San Francisco: Demand fair; supply ample; bleachable fancy 8¼¢ lb.; yellow grease 7¢ lb.

BARLEY FEED

San Francisco: Demand fair; supply ample; rolled $68, ground $67.

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $3.43; standard ground $3.39.

Portland: Demand good; supply ample; trend unchanged; rolled $60, ground $58.

Philadelphia: Demand dull; supply fair; pulverized $51.50.

Chicago: Demand good; supply light; $43.

Ogden: Supply normal; rolled $54@59; whole barley $47@52.

Seattle: Demand fair; trend firm; supply good; whole barley $60 ton, ground barley $61 ton, rolled barley $63 ton, all ex-warehouse, l.c.l., sacked.

Baltimore: Demand good; supply light; $52.50.

Boston: Demand slow; supply good; pulverized $52.75.

New Orleans: Demand fair; trend steady; supply adequate; pulverized $54@56.

BENTONITE (SODIUM)

Denver: Demand fair; trend unchanged; supply ample; $26.50, f.o.b. Denver warehouse.

Chicago: Demand very good; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular 30 mesh $15.50; fine granular, 80 to 100 mesh $12.75; powder, 200 mesh $12.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlot: 80 granular $12.50 net; 200 mesh fine $12.25 net.

"POOR RUDOLPH — GROUNDED AGAIN! HE SHOULD KNOW THAT FEEDS WITH MERRY MIXER GREENULES CAN NEVER GET HIM DOWN TO FLIGHT WEIGHT"
Pack Bigger Gains Into Your Feeds with MERRY MIXER Dehydrated Alfalfa
CONSOLIDATED BLENDERS INC., Fremont, Nebr.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply normal; $80@85.

BLOOD MEAL

San Francisco: Demand slow; supply ample; $5 a unit of ammonia.

Portland: Demand slow; supply ample; trend unchanged; $95.

Chicago: Demand fair; supply adequate; $100@120 ton, guaranteed 80% protein.

Seattle: Demand fair; trend steady; supply good; $80 ton, ex-warehouse, truck lots.

Ogden: Supply normal; $97.50 ton in 100-lb. bags, f.o.b. Ogden.

Los Angeles: Demand fair; trend steady; supply ample; $5 a unit of ammonia.

Cincinnati: Demand fair; trend steady; supply adequate; $110.

Louisville: Demand fair; trend steady; supply normal; $80@85.

Denver: Demand spotty; trend steady to weaker; supply ample; $75, unground.

New Orleans: Demand fair; trend firm; supply adequate; $95@100, protein guaranteed.

BONE MEAL (STEAMED)

New Orleans: Demand good; trend steady; supply adequate; $85@90, ex-dock, New Orleans.

Portland: Demand good; supply ample; trend unchanged; import $90.

Boston: Demand and supply steady; $85.

Ft. Worth: Demand fair; supply adequate; $85, sacked, f.o.b. Ft. Worth, local manufacture.

Chicago: Demand slow; supply adequate; $65@85.

Seattle: Demand and trend steady; supply good; $85 ton, ex-dock, truck lots.

Louisville: Demand slow; trend steady; supply normal; $70@75.

Los Angeles: Demand fair; trend steady; supply ample; $89.50, domestic.

St. Louis: Demand good; trend steady; supply adequate; $90@95 ton, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $80 ton, sacked, f.o.b. Cincinnati.

Omaha: Demand strong; supply ample; $80.

Buffalo: Demand good; trend steady; supply limited; $85 ton, sacked.

San Francisco: Demand good; supply ample; $82.50.

BREWERS DRIED GRAINS

Ft. Worth: Demand fair; offerings scarce; 26% $63.10, delivered Ft. Worth, December.

New Orleans: Demand slow; trend easier; supply light; 26% $57.50@60.

Boston: Demand active; supply tight; 26% $65.50; 22% $64.

Louisville: Demand good; trend strong; supply fair; $58.

Chicago: Demand slow; supply light; 26% $57@57.50.

Cincinnati: Demand poor; trend steady; supply somewhat limited; $63.75@64.

St. Louis: Demand good; trend higher; supply ample; $48 ton bulk, $53 ton sacked.

Los Angeles: Demand fair; trend steady; supply ample; $59 sacked, $52 bulk, f.o.b. Van Nuys.

Buffalo: Demand and supply fair; trend steady to higher; $57.50 bulk, Boston.

Philadelphia: Demand slow; supply light; $68.

BREWERS DRIED YEAST

Denver: Demand fair; trend unchanged; supply ample; $11 cwt.

Buffalo: Demand good; trend firmer; supply limited; $10.70 cwt.

San Francisco: Demand fair; supply good; 10¢ lb.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¾@12½¢, l.c.l.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

St. Louis: Demand fair; supply adequate; 10¢ lb. in carlots; 10½¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11½@12¢ lb. in less than ton lots.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

Los Angeles: Demand good; trend steady; supply limited; 9¢, 5 tons or over.

Boston: Demand good; supply fair; 11¢ lb.

Portland: Demand good; supply ample; trend unchanged; 13¢.

Louisville: Demand fair; trend steady; supply normal; 10¢ lb.

Omaha: Demand good; supply adequate; 11¢ lb.

BUTTERMILK-CONDENSED

Louisville: Demand fair; trend steady; supply ample; $4.25 cwt.

Boston: Demand fair; supply light; $3.75 cwt.

Portland: Demand slow; supply ample; trend unchanged; $4.75.

New Orleans: Demand fair; trend steady to firm; supply adequate; 100-lb. drum $4.75@4.90.

Los Angeles: Demand fair; trend steady; supply ample; 100 lb. drums $5.50; large barrels $4.75.

Philadelphia: Demand slow; supply fair; $4.25 barrels.

San Francisco: Demand fair; supply good; $5 cwt.

Chicago: Demand fair; supply adequate; $3.25@3.50 cwt. in carlots.

Ogden: Supply normal; $4.90, 100-lb. drum.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $13.97, flour $9.72.
Buffalo: Crystals $14.74, flour $10.47.
Toledo: Crystals $16.39, flour $12.14.
Boston: Crystals $16.18, flour $10.93.
Limecrest, N.J.: Crystals $9.75, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

Minneapolis: Plain $11; iodized (⅛ lb. KI per ton) $14.45; iodized manganesed $15.90, in 100-lb. bags.

Chicago: Plain $8.90 ton in 100-lb. bags, delivered.

Seattle: Demand steady; supply good; trend steady; $14 ton, ex-warehouse, truck lots.

CHARCOAL

Los Angeles: Demand slow; trend steady; supply ample; poultry charcoal, oak, 40 lb. bags $176 ton.

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

Boston: Demand and supply light; $95, nominal.

San Francisco: Demand steady; supply ample; $54.50.

COCONUT MEAL

San Francisco: Demand fair; supply ample; solvent $66, expeller $71.

Portland: Demand slow; supply limited; trend unchanged; $72.

Seattle: Demand slow; trend steady; supply limited; $72 ton, delivered carlots, Puget Sound area.

Los Angeles: Demand slow; trend steady; supply ample; cake, ex-dock $71@71.50.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply ample; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 16½@19¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLBULES

Boston: Demand good; supply adequate; 4¢ lb.

New York: Demand good; trend upward; supply limited; 4½¢ lb., f.o.b. eastern shore.

New Orleans: Demand good; supply very limited; trend steady; 50% solids, menhaden $80@81.

Los Angeles: Demand good; trend steady; supply limited; 4¢ lb.

CORN GERM MEAL

St. Louis: Demand good; trend higher; supply adequate; $45 ton bulk, $50 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $53.08, meal $71.08.
Atlanta: Feed $62.69, meal $80.49.
Birmingham: Feed $60.74, meal $78.74.
Boston: Feed $59.61, meal $77.60.
Chicago: Feed $49, meal $67.
Cleveland: Feed $56.31, meal $74.31.
Denver: Feed $58.37, meal $76.37.
Ft. Worth: Feed $56.93, meal $74.93.
Indianapolis: Feed $53.74, meal $71.74.
Kansas City: Feed $49, meal $67.
Louisville: Feed $53.30, meal $71.39.
New Orleans: Feed $58.27, meal $76.27.
New York: Feed $59.20, meal $77.20.
Norfolk: Feed $58.37, meal $76.37.
Philadelphia: Feed $58.78, meal $76.78.
Pittsburgh: Feed $56.93, meal $74.73.
St. Louis: Feed $49, meal $67.

CORN OIL MEAL

Louisville: Demand slow; trend strong; supply ample; $57.10 ton.

Cincinnati: Demand fair; trend steady; supply adequate; $55@56.

COTTONSEED OIL MEAL

Kansas City: Demand fair; trend higher; supply very light for solvent, adequate for old process; $58@59, sacked, Memphis, for solvent, nearby; $58.50@59, sacked, Memphis, for old process.

Boston: Demand slow; supply adequate; $74.50.

Ft. Worth: Demand good; offerings of immediate shipment light; carlots, 41% old process $60@62, f.o.b. central Texas mills; solvent 41% low gossypol $65, delivered Ft. Worth; pellets $2 additional; cottonseed hulls $33@34, delivered Ft. Worth.

New Orleans: Demand good; trend steady; supply limited; 41% old process $77@77.50.

Louisville: Demand fair; trend steady; supply normal; old process $64.75, new process $63.75.

Los Angeles: Demand good; trend steady; supply limited; $64, local.

Wichita: Demand slow; supply sufficient; 41% old process $67, solvent $66@67.

Portland: Demand good; supply limited; trend unchanged; $64, f.o.b. Los Angeles.

Philadelphia: Demand dull; supply fair; $72.50.

Cincinnati: Demand fair; trend steady; supply somewhat limited; solvent $68.75@69; old process $69.75@70.

Buffalo: Demand poor; trend steady; supply fair; $75.50, sacked, Boston.

San Francisco: Demand good; supply ample; expeller $68.50, solvent $66.

Omaha: Demand good; supply adequate; 41% solvent $72.50, pellets $75.50.

Chicago: Demand slow; supply tight; hydraulic $68.50@69; solvent $68@68.50.

Seattle: Demand fair; trend steady; supply good; $77 ton, delivered, carlots, 41% expeller process.

Ogden: Supply normal; 41% $68@73.

Atlanta: Demand good; trend steady; supply ample; 41% $81, sacked, immediate.

D ACTIVATED ANIMAL STEROL, POWDERED

Kansas City: Demand and supply normal; trend steady; 10½@11¢ lb.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb.; ton lots and less 17¢; 12,000,000 units per lb., 5 tons to a carload 28¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50.
Wales, Tenn.: $84.10.
Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $58 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $55 in bulk.

DICALCIUM PHOSPHATE

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $89.06 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $90.50, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $79.55, f.o.b. Trenton in 100-lb. multiwall bags.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b.

Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Demand fair; supplies adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $79.55 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $89.55; 21% phosphorus, 20,000 lb. or more $90.30, basis Chicago Heights and Nashville, less than 20,000 lb. $100.30; freight equalized with St. Louis, Trenton, Mich., and Godwin, Tenn.; bulk boxcars or hoppers, $3 net ton less than bagged material.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½%, granular $79.55; freight equalized with closest dicalcium phosphorus producing point, carload basis.

Denver: Demand fair; trend unchanged; supply ample; $83.50, f.o.b. plant, St. Louis.

Portland: Demand slow; supply ample; trend unchanged; $100.

Cincinnati: 18% phosphorus $88@89.

DISTILLERS DRIED GRAINS

San Francisco: Demand fair; supply ample; $54; solubles $80.

Buffalo: Demand fair; trend steady; supply poor; $65, bulk, Boston.

Boston: Demand active; supply tight; Canadian light $67; domestic dark $68@69.

Louisville: Demand good; trend steady; supply fair; production improving; bourbon, light $58.50, dark $60.50, solubles $80.

Philadelphia: Demand dull; supply light; $68.50.

Cincinnati: Demand fair; trend steady; supply somewhat limited; $60@65.

DRIED BEET PULP

Cincinnati: Demand fair; trend steady; supply adequate; $60@62.

Los Angeles: Demand active at lower price; trend steady; supply limited on lower price; $55@58.50, paper bags.

Chicago: Molasses pulp $56.25, in papers; plain pulp $56.50.

Boston: Demand slow; supply adequate; $65@66.50.

Buffalo: Trend steady; $66, sacked, Boston.

Atlanta: Demand fair; trend steady; supply limited; $72.35, sacked immediate.

Ogden: Supply normal; $46@50 ton.

Seattle: Demand good; trend steady; supply sufficient; $52 ton, delivered, carlots, sacked.

Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $65@66, delivered Ft. Worth, December shipment.

New Orleans: Demand slow; supply adequate; trend steady; $54@56.

San Francisco: Demand good; supply fair; $51.80.

DRIED BUTTERMILK

San Francisco: Demand fair; supply ample; 11¢ lb.

Buffalo: Demand good; trend firmer; supply limited; $9.10 cwt.

Ft. Worth: Demand very slow; supply light; local production $12 cwt., f.o.b. Ft. Worth.

Minneapolis: Market unchanged and quiet at $8.50@9.50 cwt.

Chicago: Demand improving; supply light; medium acid $8.50@8.75, sweet cream $8.77@9.25 cwt. in carlots.

Ogden: Supply normal; $7.25, 100-lb. bag.

New Orleans: Demand slow; supply light; trend steady; $10@11 cwt.

Boston: Demand and supply fair; 11¢ lb.

Louisville: Demand fair; trend steady; supply ample; 9@9½¢ lb.

Wichita: Demand slow; supply adequate; $8.25 cwt.

Los Angeles: Demand fair; trend steady; supply ample; 11¢.

DRIED CITRUS PULP

Los Angeles: Demand active; trend steady; supply scarce; f.o.b. southern California producers' plants: orange $50.50 sacked, $45.50 bulk.

Landby Dehydrating Co.

Manufacturers of Dehydrated Alfalfa Meal

Established 1940
A. J. Landby, Warroad, Manager
Office Phone 27 Res. Phone 153
Mill at Swift, Minn.

Atlanta: Demand fair; supplies ample; pulp $43, meal $38, sacked, immediate.

New Orleans: Demand good; trend steady; supply light; $41@43, Florida points origin.

Boston: Demand spotty; supply adequate; $34, quick shipment, Florida points.

San Francisco: Demand good; supply fair; meal $55.

Buffalo: Demand and supply fair; trend steady; $36, sacked, f.o.b. Florida points.

DRIED SKIM MILK

Buffalo: Demand good; trend steady; supply ample; $11.50 cwt.

San Francisco: Demand and supply fair; 12½¢ lb.

Boston: Demand good; supply fair; 12 @12½¢, l.c.l.

New Orleans: Demand good; trend steady; supply ample; $11.50@12.50 cwt.

Louisville: Demand fair; trend firm; supply ample; 11½@12¢ lb.

Philadelphia: Demand slow; supply fair; $11.50.

Minneapolis: Market unchanged at $10.50@11 cwt.

Chicago: Demand fair; supply adequate; $10.50@11 cwt. in carlots.

Ogden: Supply normal; $15.15, 100-lb. drum.

Portland: Demand slow; supply ample; trend unchanged; 12½¢.

Los Angeles: Demand fair; trend steady; supply ample; $13.75.

Cincinnati: Demand fair; trend steady; supply adequate; 11@12¢.

DRIED WHEY

Portland: Demand slow; supply ample; trend unchanged; $4.95.

Philadelphia: Demand slow; supply fair; $6 cwt.

Los Angeles: Demand fair; trend steady; supply ample; plants $5.55; f.o.b. Los Angeles warehouses $6.10.

Kansas City: Demand and supply normal; trend steady; straight grade $6.25 cwt. delivered or $5.25 f.o.b. plant, plus freight, whichever is lower; partially delactosed $6.40.

New Orleans: Demand fair; trend steady; supply sufficient; $6@6.50 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6.25 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots f.o.b. warehouse, Ft. Worth.

Cincinnati: Demand fair; trend steady; supply adequate; $5.25 cwt.

Boston: Demand poor; supply plentiful; $5.25 cwt.

Louisville: Demand fair; trend firm; supply normal; 6½¢ lb.

San Francisco: Demand steady; supply good; $5.50 cwt.

Buffalo: Demand poor; trend steady; supply fair; $6 cwt., delivered.

Denver: Demand fair; trend unchanged; supply ample; $7 cwt., $6 carlots.

Ogden: Supply normal; $6.90, 100-lb. bag.

Seattle: Demand and trend steady; supply good; $6.50 cwt., ex-warehouse, l.c.l.

Chicago: Demand fair to good; supply light; $5.35 cwt. in carlots.

Minneapolis: Market steady at $5@5.50 cwt.

FEATHER MEAL (HYDROLYZED)

Boston: Demand steady; supply adequate; $80, f.o.b. Maine shipping points.

FISH MEAL

Boston: Demand good; supply limited; $138@140.

Ft. Worth: Demand good; supply sufficient; 63% South African pilchard with solubles $145; Norwegian herring fullmeal with solubles $164.50, f.o.b. Houston.

Cincinnati: Demand fair; trend steady; supply adequate; $145@155.

New Orleans: Demand light; trend steady; supply limited—Gulf fishing poor account rough weather; 60% menhaden $140@142, burlaps; scrap $136@138; crude fish oil, menhaden $9@10, imported.

Louisville: Demand slow; trend steady; supply ample; $150 ton.

Chicago: Demand fair to good; supply limited; eastern menhaden fish meal, 60% protein $143@146; western blended, 60% protein $130; Gulf $145; Northwest herring-salmon blend $130; Canadian herring, 73% protein $2.18 a unit of protein, all f.o.b. producing points; 60% blended $150, delivered Midwest points; late December to January $152.

Atlanta: Demand fair; trend strong; supply limited; 60% $152, sacked, immediate, nominal.

Minneapolis: Market firmer, with 70% herring quoted at $2.18 a unit of protein, West Coast; 60% meal $148@150, delivered.

Seattle: Demand slow; trend steady; supply good; $2 a unit protein, ex-dock, carlots.

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@173.

Portland: Demand slow; supply ample; trend unchanged; $2, f.o.b. Vancouver; $2.25, f.o.b. California.

Los Angeles: Demand active; trend strong; supply light; $2.20 a unit of protein.

Buffalo: Demand good; trend stronger; supply limited; 60% protein menhaden $148 ton bulk, $153 sacked.

Denver: Demand fair; trend unchanged; supply ample; $2 a unit, f.o.b. Seattle.

San Francisco: Demand fair; supply ample; $2.22½ a unit of protein.

HAY

Denver: Demand slow; trend steady; supply ample; baled alfalfa $34; baled mountain hay $36@38.

Portland: Demand slow; supply ample; trend unchanged; $35.

Boston: Demand and supply steady; No. 2 timothy $36@38.

Cincinnati: Demand stronger; trend improving; supply adequate; No. 1 timothy hay $22.50; No. 1 red clover $24; No. 1 second cutting green alfalfa $26; No. 1 red clover, mixed $26; wheat or oats straw $22.

Ft. Worth: Demand good; trend strong; offerings light; carlots, baled, No. 1 alfalfa $45@48, No. 2 $43@46; prairie No. 2 $39.50@41.50, delivered TCP on 50% drouth freight rate.

Ogden: Supply normal; $1.10 bale; $21@24 ton in the barn.

Seattle: Demand fair; trend steady; supply good; $35 ton, delivered, truck lots, U.S. No. 2 green.

New Orleans: Demand fair; trend easier; supply adequate; No. 1 baled alfalfa $62@64; Kansas prairie $46@48; No. 1 timothy $48@50; timothy and clover mixed $64@66.

Louisville: Demand poor; trend weak; supply heavy; alfalfa, No. 1 $25, No. 2 $21; mixed clover and timothy or straight clover or timothy, No. 1 $20@22, No. 2 $18@20; straw $20@22.

Los Angeles: Demand fair; trend steady; supply ample; U.S. No. 1 $31@33; U.S. No. 2, leafy $28@30; U.S. No. 2 green $27@28; U.S. No. 2 $25@26.

St. Louis: Demand good; trend steady; supply ample; No. 1 alfalfa, first and second cutting $16@18 ton; No. 1 alfalfa, third and fourth cutting $20@25 ton; No. 1 prairie $37.50@38 ton; No. 1 timothy and clover mixed $26@28 ton; wheat straw $14@16 ton.

Wichita: Demand slow; supply very light; prairie $30, alfalfa $40.

Philadelphia: Demand slow; supply fair; $28 ton.

HOMINY FEED

Kansas City: Demand good; trend stronger; supply moderate; white $45.50, yellow $46@47.50, bulk, Kansas City, with $3.50 more for sacks.

Boston: Demand slow; supply good; $54.

New Orleans: Demand fair; trend easier; supply adequate; $59.50@60.

Cincinnati: Demand fair; trend steady; supply adequate; $50@51.

Chicago: Demand fair; supply adequate; $48.

Seattle: Demand fair; trend steady; supply good; $63 ton, delivered, sacked, carlots.

Louisville: Demand slow; trend steady; supply ample; $48.20.

Buffalo: Demand fair; trend steady; supply adequate; $54.50, bulk, Boston.

LINSEED OIL MEAL

San Francisco: Demand and supply fair; $74.50.

Omaha: Demand very good; supply adequate; 34% solvent $67; 32% old process $76; pellets $2.50 higher on each.

Kansas City: Demand fair; trend firm; supply ample; $52.50@53.50, bulk, Minneapolis.

Boston: Demand slow; supply light; 32% $75.17, bulk.

Ft. Worth: Demand fair; supply adequate; carlots, 34% or better, January $77.05, delivered Ft. Worth; pellets $2.50 premium.

Chicago: Demand fair; supply adequate; solvent $62.50@63; expeller $72.50@73.

Seattle: Demand slow; trend steady; supply limited; $82 ton, delivered, carlots, 34% protein.

Minneapolis: Market steady to somewhat easier because of reseller offerings. Demand fair and directions steady. Quotations: 34% $52.50@53.50, bulk, Minneapolis; 32% flaxseed screenings oil feed $31.50, bulk, Minneapolis.

New Orleans: Demand fair; trend steady; supply ample; 32% or better $76.50@77.

Cincinnati: Demand fair; trend steady; supply adequate; new process $68.50@69.50; old process $78@78.50.

Louisville: Demand fair; trend firm; supply normal; old process $80.10; new process $70.10.

Wichita: Demand slow; supply sufficient; 34% $69.

Portland: Demand good; supply limited; trend unchanged; $64, f.o.b. Los Angeles.

Philadelphia: Demand slow; supply fair; $74.

Los Angeles: Demand fair; trend steady; supply ample; $72@73, resale.

MALT SPROUTS

St. Louis: Demand good; trend steady; supply adequate; No. 1 bulk $43 ton, No. 1 sacked $48 ton, No. 2 bulk $41 ton.

Chicago: Demand slow; supply adequate; No. 1 $47.50@48.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $54.50@55.

New Orleans: Demand slow; trend steady to higher; supply adequate; $48.50@49.

MEAT SCRAPS

Denver: Demand very poor; trend steady to weak; supply abundant; 50% protein $60@62.50.

Kansas City: Demand good; trend stronger; supply adequate; 50% meat and bone scrap from packers $70.50@72, sacked, from renderers $70.

Ft. Worth: Demand fair; supply ample; meat and bone, 50% $66@68, f.o.b. or delivered Ft. Worth.

St. Paul: Market quiet, with prices around $68, for 50% meat and bone scraps.

New Orleans: Demand slow; trend steady; supply adequate; 50% meat and bone $80@82.

Cincinnati: Demand fair; trend steady; supply adequate; 50% $66@69.50 ton, sacked, f.o.b. Cincinnati.

Chicago: Demand slow; supply adequate; 50% protein $62.50@72; 55% $75@82.

Seattle: Demand and trend steady; supply good; $75 ton, ex-warehouse, 50% protein.

New York: Demand fair; trend steady; supply good; 50% $70, 55% $75, bulk; 50% $73, 55% $78, sacked.

Ogden: Supply normal; $82.50 ton in 100-lb. bags.

Boston: Demand slow; supply plentiful; $1.10 per protein unit; converted 50% $67.50.

Louisville: Demand slow; trend easy; supply ample; $70@75.

Portland: Demand slow; supply ample; trend unchanged; $1.50.

St. Louis: Demand fair; trend lower; supply ample; 50% $71.50@73.50 ton bulk, $76.50@78.50 ton in burlap sacks, $75.50@77.50 ton in paper sacks.

Wichita: Demand fair; supply moderate; 50% $80, f.o.b. plant; 55%, no quotations, no offerings.

Los Angeles: Demand moderate; trend steady; supply adequate; $1.60@1.65 a unit of protein.

Omaha: Demand good; supply ample; $75.

San Francisco: Demand fair; supply ample; $1.55 a unit of protein.

Buffalo: Demand just fair; trend steady; supply ample; 50% meat scraps $70 ton bulk, $73 sacked.

MILLET

St. Louis: Demand fair; trend firm; supply scarce; recleaned Early Fortune $4.40 cwt., sacked; recleaned White Proso $4.60 cwt., sacked.

MILLFEED

Minneapolis: The market is holding firm because of lighter offerings, with demand

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remaining fairly good. Quotations: bran $44.50@45, standard midds. $43.50@44.50, flour midds. $45@46.50, red dog $46@49.

Kansas City: Demand good, especially for sacked feeds which are priced close to bulk; trend stronger; supply over-all adequate but some mills are short because of shutdowns forced by last week's rail embargoes; quotations Nov. 28: bran $38.25 @39, shorts $39.50@40, middlings $39@ 39.75, bulk, Kansas City; bran $41.25@42, shorts $41@42, sacked, Kansas City.

Denver: Demand good on shorts; trend slightly weaker; supply ample; bran $45; shorts $44.75; mill run $45.

New Orleans: Demand good; trend firmer; supply adequate; $51@52.50 on bran; $51@52.25 on shorts.

Ft. Worth: Demand fair; offerings more liberal; carlots, burlaps, prompt, bran $48.50@49.50; gray shorts $48.50@49.50, delivered Texas common points; $1.50 lower on both bran and shorts compared with previous week.

Omaha: Demand good; supply fair; bran $41.75, shorts $41.75; standard midds., bulk $40.50.

Wichita: Demand poor; supply ample; basis Kansas City, Nov. 27: bran $41@ 41.50, shorts $41@41.50; bran declined $1@ 1.50 ton and shorts $1.50@1.75 ton, compared with the previous week.

Chicago: Millfeeds advanced slightly at one time during the week, but then fell back to around previous levels, with red dog even showing a small loss by the end of the period. Not much trade existed—flour mill running time is slow, but demand also is lagging. Bran $46, standard midds. $47, flour midds. $52@53, red dog $53@54.

St. Louis: Demand good; trend higher; supplies adequate; bran $46@46.50, shorts $46@46.50, St. Louis switching limits.

Cincinnati: Demand fair; trend steady; supply adequate; bran $52.25@53, middlings $52.25@53.

Buffalo: There was enough buying for spot consumption to hold market levels. Middlings were in greater supply than bran. Colder weather has increased the expectancy for a greater demand for bran. Bran ended unchanged to 50¢ lower after being off $1 earlier in the week; middlings regained an early $1.50 loss and ended unchanged and heavy feeds were also unchanged. Bran $48.50@49.75, standard midds. $49.50@50, flour midds. $55.50@56.50, red dog $55.50@56.50.

New York: Demand and supply good; trend steady; bran $56@56.50, standard midds. $56@57.

Boston: Demand cautious; supply adequate; bran, Canadian $54, domestic $56.50; domestic middlings $56.50.

Philadelphia: Demand slow; supply ample; bran $56, standard midds. $58, red dog $62.

Seattle: Demand good; trend strong; supply tight; $45 ton, delivered, common transit points, carlots.

Portland: Demand slow; supply ample; trend unchanged; $38.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $44, middlings $49; to Denver: red bran and mill run $51, middlings $56; to California: red bran and mill run $51.50, middlings $56.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Demand fair; trend steady; supply ample; mill run, Utah-Idaho billing, sacked $54; red bran, delivered CCP, sacked $57@58.

MINERAL FEED

Denver: Demand fair; trend unchanged; supply ample; 7.5% phenothiazine, 45-lb. block $4.50; 8.2% phosphorus, 50-lb. block $3.50; 7.5% phenothiazine, 8.2% phosphorus, 45-lb. block $5.25; 5% phosphorus, 50-lb. block $2.65.

Ogden: Supply normal; $106.50 ton in 50-lb. blocks; $96.50 ton, granular, 50-lb. bags.

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Seattle: Demand fair; trend steady; supply good; competitive brands $45 ton, ex-warehouse; high phosphorus mixtures $65 ton, ex-warehouse.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Ft. Worth: Demand fair; supply ample; all-purpose granules $88, block $93, mineral phosphorus 6%, granules $104, block $109; cattle-sheep mineral 7% phosphorus, granules $97, block $102; hog mineral phosphorus 3½%, granules 87, phosphorus 2% $76 (all in 50-lb. paper bags).

Portland: Demand good; supply ample; trend unchanged; $42.

Wichita: Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $95; 100-lb. bags $90, f.o.b. plant.

MOLASSES

Portland: Demand slow; supply ample; trend unchanged; 600-lb. drums $15.25.

Los Angeles: Demand good; trend steady; supply adequate; $35, f.o.b. tank cars; $35.25, f.o.b. tank trucks, both Los Angeles harbor.

Kansas City: Demand lighter, with some mixers reportedly backing away from high prices; trend stronger; supply adequate but still tank car shortage holding up deliveries in some cases; 26@28¢ gal. for nearby with market poorly defined.

Boston: Demand fair; supply ample; 27½¢ gal. in tank cars.

Atlanta: Citrus molasses—demand good; supply limited; trend strong; $25 ton, bulk, f.o.b. Florida producing points, immediate.

Minneapolis: Market firm at 28¢ gal., f.o.b. New Orleans.

New York: Demand good; trend higher; supply limited; blackstrap 27¢ gal., tank cars, tank wagons, f.o.b. New York.

Seattle: Demand steady; trend firm; supply sufficient; $35 ton, f.o.b. Seattle, tank car lots.

Ft. Worth: Demand good; supply very scarce; blackstrap 27¢ gal., f.o.b. Houston; delivered Ft. Worth trucks $53.87; seller's market price on date of shipment.

Cincinnati: Demand fair; trend steady; supply somewhat limited; 26@27¢ gal., New Orleans.

New Orleans: Demand fair; supply light; trend stronger; 26¢ gal in tank cars; 600-lb. steel drums $15.26, customers' drums.

Louisville: Demand fair; trend strong; supply normal; 28¢ gal., tank car lots, f.o.b. Gulf ports.

San Francisco: Demand and supply good; $35 ton, f.o.b. cars, Richmond, Cal.

Buffalo: Demand good; trend steady to higher; supply poor; 27½¢ gal., f.o.b. Albany.

NIACIN

New York: Trend steady; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Ft. Worth: Demand fair; supply scarce for immediate delivery; oat millfeed $52.40, reground oat millfeed $34.40.

New Orleans: Demand fair; trend steady to stronger; supply adequate; steam crimped oats $79@81, white oats $57@59, mixed feed oats $45@47.

Boston: Demand steady; supply adequate; white pulverized $57, ground mixed $45.75; reground oat feed $19.75.

Chicago: Demand fair; supply adequate; reground oat feed $20; fine ground feeding oatmeal $78@80; feeding rolled oats $88 @90.

Minneapolis: Prices are about unchanged, with demand fairly active. Quotations: feeding rolled oats $90, standard pulverized $51, feeding oatmeal $75, crimped oats $63.50, reground oat feed $22.

Seattle: Demand fair; trend steady; supply good; whole oats $67 ton, ground oats $68 ton, rolled oats $71 ton, all ex-warehouse, L.c.l.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $25; pulverized whole oats $51.50@53; rolled oats $95@96.

Louisville: Demand fair; trend strong; supply ample; reground $27.75; rolled $97.75; feeding $87.75; pulverized white

St. Louis: Demand good; trend higher; supply adequate; reground oat feed $22 in 100-lb. burlap bags; pulverized white oats $48.50 ton, choice $50.

Portland: Demand slow; supply ample; trend unchanged; rolled $65, ground $62, cleaned $66.

Los Angeles: Demand fair; trend steady; supply ample; white pulverized $71.

OYSTER SHELL

Portland: Demand good; supply ample; trend unchanged; western $30, eastern $36; granite grits $26.50, crystal grits $26.50.

Los Angeles: Demand and trend steady; supply ample; local $18.35, eastern $25.

Boston: Demand good; supply plentiful; $23.21 in paper.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

Louisville: Demand steady; trend firm; supply ample; in 80-lb. bags $21.34, 50-lb. bags $21.54, 25-lb. bags $21.84.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Seattle: Demand slow; supply good; trend unchanged; western shell $28 ton, eastern shell $32 ton, both ex-warehouse.

PEAT MOSS

San Francisco: Demand fair; supply ample; $3.35 bale.

Portland: Demand slow; supply ample; trend unchanged; $3.15.

Boston: Demand and supply steady; $3@ 3.10 bale.

Chicago: Demand good; supply ample; $3.75@3.85 standard 7⅗ cu. ft. bale.

Seattle: Demand slow; trend steady; supply sufficient; $2.90 bale, delivered, carlots, horticulture and poultry.

New York: Demand and supply good; trend upward; Canadian, 7 cu. ft. bale, veneer wrapped $3.25, freight prepaid; German 7⅗ cu. ft. bale $2.97, at dock, New York.

Philadelphia: Demand slow; supply fair; $2.95, f.o.b. pier.

Los Angeles: Demand and trend steady; Canadian, 6.1 cu. ft. bales $3.45 in 300-bale lots, delivered California main line points.

PEANUT OIL MEAL

Atlanta: Demand slow; trend steady; supply limited; 45% $65, sacked, immediate.

POTASSIUM IODIDE, U.S.P.

St. Louis: Demand fair; trend steady; supply ample; 100% pure potassium U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; 90% potassium iodine calcium stearate mixture, 225-lb. lots in leverpak drums $1.81, 100-lb. lots in fiber drums $1.85.

New York: Trend steady; granular or crystals $1.80½ lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.96 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 4⅗¢ gram in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand good; trend steady; supply ample; bran $55.61.

Atlanta: Demand fair; trend strong; supply limited; bran $46, sacked, immediate.

Ft. Worth: Demand slow; supply moderate; carlots, rice bran $37@38, prompt shipment, f.o.b. south Texas rice mills; hulls $4@5, f.o.b. mills.

San Francisco: Demand fair; supply ample; bran $44, polish $48.

SCREENINGS

Minneapolis: Offerings are still rather limited, but buyers are resisting prices which are quoted somewhat higher. Quotations: country run $20@25, lights $10@20, mediums $20@30, heavies $30@40; Canadian $18, bulk, Duluth; Canadian ground $28, sacked; flax screenings $24.

New Orleans: Demand fair; trend steady to stronger; supply plentiful; 3/64 in. grind $40@42.20.

Chicago: Demand fair; supply plentiful; ground grain screenings $30; Canadian, bulk $22.

Ft. Worth: Demand good; supply limited; 12% protein ground $42, sacked, delivered Ft. Worth, December.

Cincinnati: Demand fair; trend strong; supply tight; Canadian $28; barley $27@31.

Denver: Demand good; trend stronger; supply fair; ground grain $39.

Buffalo: Demand and supply fair; trend higher; ground, sacked $32.50, New York, L&R; unground, bulk $23, New York.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $18.85@19.10.
Buffalo: $23.65@23.90.
Chicago: $23.10@23.35.
Cincinnati: $21.80@22.
Des Moines: $23.60@23.85.
Kansas City: $23.20@23.45.
Memphis: $20.50@20.70.
Minneapolis: $24.25@25.55.
Philadelphia: $22.65@22.90.
St. Louis: $22.50@22.75.
Tampa: $18@18.20.
Toronto: $27.50@27.80.

SORGHUMS

Cincinnati: Demand fair; trend steady; supply adequate; $3.

Ft. Worth: Demand slow; supply sufficient; carlots, bulk, No. 2 yellow milo $2.37@2.42, delivered Texas common points.

Los Angeles: Demand moderate; trend steady; supply ample; No. 2 milo, delivered CCP, prompt $2.88½.

SOYBEAN OIL MEAL

Wichita: Demand good; supply sufficient; 44% $64, 50% $72, f.o.b. Wichita.

Portland: Demand good; supply ample; trend unchanged; net $43.50.

Los Angeles: Demand slow; trend steady; supply adequate; $76.94, delivered CCP.

Philadelphia: Demand slow; supply ample; $46, bulk, Decatur.

Ogden: Supply normal; $85@90.

Seattle: Demand and supply good; trend easier; $75.50 ton, delivered, carlots, sacked.

Decatur: Demand fair; supply good; 44% bulk, unrestricted $47@47.50.

Chicago: The soybean oil meal market was a day-to-day trading affair during the week ending Nov. 28. The emphasis was on keeping close to shore, with little interest shown in future buying. Price levels remained virtually unchanged from a week ago; 44% soybean oil meal $56.50@57.

Atlanta: Demand fair; trend steady; supply ample; 44% $64.50, sacked, immediate.

Minneapolis: Market rather quiet, with prices holding around $42.50@44.50, bulk, Decatur.

Kansas City: Demand fair; trend stronger; supply believed plentiful although offerings at current prices are light; $46.50@ 47, bulk, Decatur, for meal for Kansas City and western shipment; $47.50@48, unrestricted.

Boston: Demand good; supply adequate; $46.50, f.o.b. Decatur.

Ft. Worth: Demand fair; supply sufficient; carlots, 44% $69@70, depending on origin, December; truck loads $66.

Cincinnati: Demand fair; trend steady; supply adequate; $47@47.50, bulk, Decatur.

Louisville: Demand fair; trend steady; supply normal; $59.10.

San Francisco: Demand fair; supply ample; $77.25.

Omaha: Demand very good; supply adequate; 44% solvent $61.50, pellets $64; 41% old process $69.

SUNFLOWER SEED

St. Louis: Demand fair; trend steady; supply ample; black—large $15.50 cwt., medium $14 cwt., small $10.50 cwt.; gray—large $16 cwt., medium $14.50 cwt., small $10.50 cwt.

TANKAGE

Cincinnati: Demand fair; trend steady; supply adequate; 60% digester $70@75.

Louisville: Demand fair; trend easy; supply ample; $72.50@77.50.

Kansas City: Demand good; trend steady; supply mostly adequate but with some packers sold up into next week; 60% digester $73@75, sacked.

St. Paul: Market quiet, with prices around $70 for 60% digester.

St. Louis: Demand fair; trend lower; supply ample; 60% $80@83 ton bulk, $85 @88 ton in burlap sacks, $84@87 ton in paper sacks.

Wichita: Demand fair; supply ample; 60% $80, f.o.b. plant.

Los Angeles: Demand fair; trend steady; supply ample; $1.45 a unit of protein.

Ft. Worth: Demand and supply light; 60% digester $76@78, f.o.b. Ft. Worth.

Omaha: Demand good; supply ample to limited; $75.

Chicago: Demand slow; supply adequate; 60% protein $70@72.

WHEAT GERM MEAL

Buffalo: Demand and supply fair; trend steady; commercial grade $65, sacked, f.o.b. Buffalo.

Chicago: Market steady at $62.

Don Butler Resigns Central Soya Post

FT. WAYNE, IND.—The resignation of Don Butler as advertising and sales promotion manager for the Central Soya Co. and McMillen Feed Mills, has been received and accepted according to Dale W. McMillen, Jr., company president.

Mr. Butler has served the company in sales, promotion and advertising management capacities for the past six years. The resignation is effective Dec. 1. No announcement of Mr. Butler's future plans has been made.

Club Party Set

TOLEDO—The Toledo Feed Club will hold a Christmas dinner party for members and their wives Dec. 3 at the Ritz Nite Club. Ray Ploeger, president, said fine entertainment has been arranged, and there will be favors and door prizes for the ladies.

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Current Developments in Design And Operation of Custom Mills

By Tom Ibberson
T. E. Ibberson Co.

The custom feed mill, as we all know, is designed and equipped to manufacture mixed feeds and to process grains to suit the demands in a particular locality.

But in all localities, there continue to be developments of one type or another in feeding and in the feed industry which have important effects on the design and operation of local custom mills. Some of the current developments and factors in custom mill design, equipment and operation are briefly reviewed here. Included are points to be considered by any operator seeking to improve his mill or considering modernization or new mill construction.

The feed industry, as we well recognize, has a good many production problems because of various recent and new developments in feed formulation, processing and handling, and service to feeders, and the custom mill operator faces certain things which may add extra expense, as compared with former years, when designing and building a mill.

Among the things which may now be involved are handling of bulk feed ingredients in truckload or carload lots; manufacturing bulk feeds and delivering them to the customer in bulk; additional services to the farm trade, such as molasses feeds and feeds containing milk; and mixing of feeds that contain trace minerals, drugs and other micro-ingredients. In some localities, facilities for making pellets and crumbles are now important, and in heavy stock areas, soft molasses pellets are a factor.

It is not possible here to go into detail on flow of materials, but it should be noted that, of course, bin arrangements and machine arrangements all have to be well coordinated. The custom mixing plant, according to its location and volume and type of business, must be properly equipped and of modern design in order to hold production costs down and keep up with competition.

A good, rounded-out custom plant should be able to store in the neighborhood of 30 tons of various ingredients, which may include soybean meal, linseed meal, cottonseed meal, meat scraps, etc., depending on the area.

As far as location of the mill proper is concerned, it naturally has to be attached to warehouses which, in approximate size, will provide for handling two or three cars incoming, three to five outgoing. Facilities in the driveway as well as on the track side of the mill should have unloading equipment for handling bulk material.

Processing Equipment

The type of processing equipment is governed by the locality in which the mill is built and the types of materials which the mill must handle. For grinding equipment, the operator has the choice of either the attrition mill or the hammer mill—the hammer mill preferably in territories where ear corn is grown. With the new quick change screen mills, this type of mill has been used to a great extent the last two or three years.

The mixing and premixing equipment is usually of the horizontal type, although there are other types that can be used. With crimp feeds, the operation can be either dry or steamed, depending on what the local trade demands.

As far as liquids are concerned, many custom mills have been using oils for quite some time. Animal fat addition has not been too prevalent up to this time in small custom mills, but the operators are now talking fats.

There are some localities, especially in heavy turkey areas, where the volume of business requires installation of pellet mills and crumblizers to meet demands.

In the sections where there is a heavy corn surplus and the farmers also have cattle, the cracking of stored corn is getting to be a very big operation. The trade is also demanding facilities for spraying molasses on this cracked corn for cattle feed.

More Bulk Bins

New custom mills today require two to three times more bulk bins over their driveways than they have had in the past, and with bulk trucks and custom grinding and mixing, these bulk bins allow the operators to make a continuous operation and still have bulk service to the farmers and not let it interfere with the custom mixing.

In the handling of bulk materials in a mill building, especially custom mills, it is not much of a problem to have these materials flow and flow properly when desired if the bin sizes are not too large or to a point where they create too much pack.

In delivery to bulk trucks, all bin bottoms and bin openings should be such that mixed feeds can be held in these bins for any length of time and still run without expensive accessories.

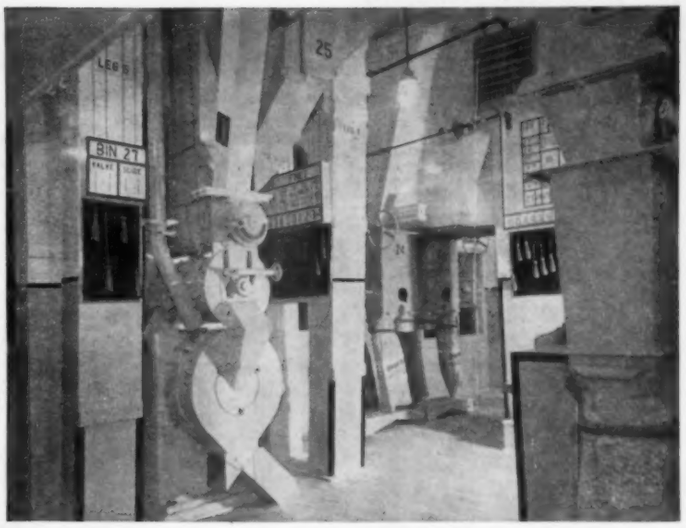
Warehousing of finished feeds is one of the big problems for country millers. In the first place, many operators do not have enough storage space and have feed stored all over town; for this reason the cost of handling naturally increases. It seems, too, that not enough attention is paid to reserving space near the mill rooms for display purposes.

Machinery Controls

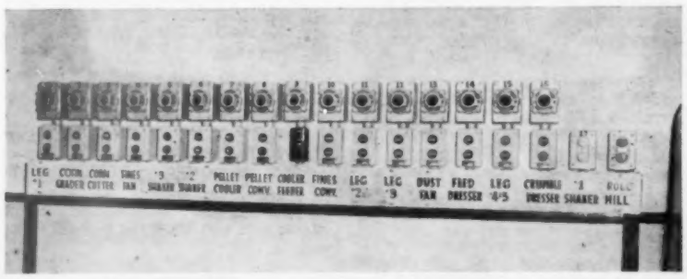
Automation in the sense that it is applied in proportioning and mixing in large feed plants is not used in small custom mills. But certain provisions are made for good and efficient control of equipment.

As shown in an accompanying picture, starter buttons and controls are put in a certain proper position, and there also are control buttons by each machine. Each starter button is equipped with a pilot light, and if anything goes wrong or there are any breakdowns or plug-ups, the operator is notified. The starter buttons are set in series so that they will govern the motors on the flow of that one machine.

Both in starting and in operation, if there is any mechanical trouble, the pilot lights as well as a horn will notify the mill operator.



Here is a view of part of the work floor of a new, well arranged custom mill. Some of the equipment and control boards and controls for various bins may be seen in the picture.



A good system of machinery controls is an important part of a modern, efficient custom feed mill. Shown here, located in a proper central position, are starter buttons for various pieces of equipment. There also are control buttons by each machine. As may be seen, each starter button is equipped with a pilot light. Both in starting and operation, if there is any mechanical trouble, the lights as well as a horn will notify the mill operator.

With the demand for improved feeds and more and better local services, and with the necessity for more efficient mill operation, many local operators have improved and modernized their plants, or new mills have been built. Shown here is an example of a new custom mill. This mill, that of the Gilmore Co-op Co., is located at Gilmore City, Iowa. It was built by the T. E. Ibberson Co., Minneapolis.

Additional Drouth Areas Designated

WASHINGTON—The U.S. Department of Agriculture has announced the designation of additional counties in Nevada, Utah, Texas and Kansas as drouth disaster areas in which eligible livestock men may obtain grains or drouth emergency mixed feeds at reduced prices.

The designations are:

Nevada—Clark and Nye counties.

Utah—Tooele and part of Box Elder.

Texas — Aransas, Galveston and part of Liberty.

Kansas—Allen, Labette, Neosho and part of Wabaunsee.

The Texas, Kansas and Utah counties also were designated for participation in the emergency hay and roughage programs.

More Egg Settings Follow Jump in Broiler Prices

SALISBURY, MD. — Nationwide egg settings by hatcheries last week indicated that the sudden jump in price of broilers encouraged more production.

The 18.35¢ average price of poultry two weeks ago, nearly 2¢ higher than previously, apparently spurred more settings. For 22 reporting states the total egg set for the week ending Nov. 24 was 20,827,000. This was 1% more than the previous week and 9% above the same week a year ago.

Chick placements in 22 states totaled 21,130,000 or 1% less than the previous week but 8% above the same week a year ago.

In the Delmarva area, broiler chick placements at 2,884,000 for the week ending Nov. 24 were 6% higher than a week ago and 9% above the same week of 1955. Settings at 3,501,000 were practically unchanged from the previous week but were 12% above the same week of 1955.

Delmarva growers sent 2,226,000 broilers to market last week. This was 25% less than the previous week but 30% above the corresponding week last year when 1,722,000 were marketed. Marketings were 75% of the average weekly placements nine to 12 weeks earlier.

The price of broilers last week in the Delmarva area averaged 17.54¢ lb., a drop of nearly 1¢ from a week earlier. Feed prices averaged $91.63 per ton, only a few cents cheaper than the week before.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
September 22	899	568	705	603	156	442	1,726	1,210
September 29	885	434	703	651	174	432	1,613	1,071
October 6	890	530	506	544	101	438	1,540	1,258
October 13	941	484	487	583	119	447	1,661	1,045
October 20	811	478	471	530	98	358	1,610	1,014
October 27	862	532	626	638	96	363	1,547	1,092
November 3	924	534	634	676	93	426	1,601	1,094
November 10	893	476	732	752	156	465	1,611	1,056
November 17	879	479	738	752	146	536	1,658	1,057
November 24	969	465	627	720	147	467	1,622	1,165

Week ending:	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
September 22	1,085	411	1,314	260	4,275	244	1,473	951
September 29	1,128	408	1,297	292	4,303	224	1,660	904
October 6	943	396	1,274	368	4,237	212	1,694	1,067
October 13	901	351	1,274	324	4,389	198	1,582	1,065
October 20	808	334	1,255	299	4,276	249	1,654	932
October 27	843	386	1,189	258	4,398	203	1,645	985
November 3	978	381	1,271	325	4,246	196	1,715	1,036
November 10	1,089	345	1,336	296	4,135	230	1,729	976
November 17	1,073	411	1,278	329	4,276	214	1,651	1,015
November 24	971	495	1,276	314	4,286	201	1,687	925

Week ending:	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1956	1955
September 22	1,729	261	1,835	228	131	771	21,275	17,708
September 29	1,986	261	1,861	215	136	898	21,536	17,998
October 6	1,792	252	1,996	178	134	889	21,236	18,176
October 13	1,798	310	2,006	132	136	773	21,006	18,288
October 20	1,714	284	1,826	142	90	744	19,977	18,596
October 27	1,575	232	1,756	155	87	673	20,141	18,780
November 3	1,672	230	1,686	155	119	675	20,667	18,982
November 10	1,760	231	1,749	188	143	944	21,292	19,023
November 17	1,557	292	1,742	212	112	863	21,270	19,595
November 24	1,717	258	1,628	176	125	889	21,130	19,534

K. C. BOARD

(Continued from page 7)

erally-licensed River-Rail elevator, operated by the Bartlett firm. The refusal was based on lack of compliance by the Bartlett firm with a board of trade rule requiring an annual weigh up of grain in regular elevators.

Commenting on the CEA action, Mr. Hart said:

"The complaint of Commodity Exchange Authority against the board of trade involves a controversy over the construction of a section of the Commodity Exchange Act.

"The rules of the board of trade provide that contracts for future delivery may be settled by the delivery of warehouse receipts issued by an approved elevator of the board of trade and described as regular. Elevators are not made regular unless they submit to the rules of the board of trade designed for the protection of holders of their warehouse receipts. One of these rules requires that the entire stock of grain in the regular elevator shall be weighed up and inspected once each year.

"Regular elevators in the Kansas City market have in all instances complied with this rule, except Bartlett and Co., who refused to have the stock of grain in the River-Rail elevator weighed up and inspected. Because of this refusal the board of trade declared this elevator no longer regular. Upon complaint to Commodity Exchange Authority under a section of the act, the board of trade was advised that notwithstanding the failure of the elevator firm to comply with the board of trade requirements its warehouse receipts must be accepted in satisfaction of futures contracts, for the reason that the elevator is under the supervision of the U.S. Department of Agriculture under the Federal Warehouse Act.

"The Kansas City Board of Trade does not believe that the language of the law deprives it of the right to regulate elevators desiring to make their warehouse receipts tenderable in satisfaction of futures contracts and, therefore, will oppose the complaint."

Continental Buys Quaker Oats Plant

PORTLAND — Continental Grain Co. has purchased the plant of the Quaker Oats Co. in Portland. Some details remain to be worked out before the transaction is completed.

This will be the first time that Continental will operate in Portland with a physical plant. Prior to the purchase, the company had only its Pacific Northwest office in Portland and had been doing its export wheat business through the port of Longview, 50 miles down the Columbia River, and at The Dalles, Ore., and Kennewick, Wash.

The plant consists of an elevator with a grain storage capacity of 700,000 bu., a small feed mixing plant and a small cereal operation. Continental said it does not plan to go into the feed and cereal business and will confine its operations at the plant to grain handling, principally in the export field.

Quaker Oats recently purchased the plant from the Union Pacific Railroad, after leasing it from the railroad for nearly 10 years.

A. H. Hankerson Dies

SAN FRANCISCO—A. H. Hankerson, former president of San Francisco Grain Exchange, died Nov. 13.

Mr. Hankerson, who was 83 years old, managed the exchange from 1939 to 1947, when he resigned because of ill health. He had been an invalid in a suburban Daly City nursing home for the past seven years. There was no call board session Nov. 19 at the San Francisco Grain Exchange in respect to his memory.

NEW BUILDING

WAKEFIELD, KANSAS—A 40 by 80-ft. steel grain building is being erected at the Farmers Elevator here, with Wilkins Construction Co., Geneva, Neb., the builders. The building floor will be dock high, Don Anderson, manager, said. Later it may be converted into a feed warehouse. It is located across the street from the elevator office.

Production of Millfeed Off Sharply

Production of millfeed in tons for week ending Nov. 23, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour production.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Nov. 16-23	25,812	554,745	11,232	293,772	9,783	233,324	46,827	1,081,841
Prev. week	‡28,859		‡14,484		‡11,741		‡55,084	
Two wks. ago	28,299		14,077		11,362		53,738	
1955	23,396	542,875	12,032	293,041	10,402	174,161	45,830	1,010,077
1954	23,793	532,379	11,590	387,511	11,200	223,230	46,583	1,133,120
1953	23,109	505,472	12,362	293,081	10,220	214,054	45,691	1,012,607
1952	23,739	528,877	15,900	324,303	9,835	215,978	49,474	1,069,218

*Principal mils. **74% of total capacity. †All mills. ‡Revised.

MARKETS

(Continued from page 2)

high rate of placements. As long as the financing arrangements continue, with growers getting 2½@5¢ a bird for growing them, the broiler consumption is considered likely to stay at a high level. The quality egg programs continue to expand in Texas, helping that segment of the feed business. Cattle grazing is slacking off some with rain badly needed to keep the crops growing.

Texas companies closed mills for Thanksgiving Nov. 29 and will generally run Saturday to make up for lost production. Some extra running time is resulting from the explosion at the Southland Feed Mills plant in Dallas. Running time averaged five days.

Northwest

For most manufacturers the upswing in formula feed demand noted a week ago accelerated this week in the Northwest. Some firms, however, noted that there was little change.

Dairy feed volume has picked up materially in most cases, with demand good both for concentrates and for lower-priced feeds. Sales of feed for beef cattle, too, have improved, and movement of cattle feed to the range country is holding at least equal to last year's volume. However, in the latter category competition from local mills and straight ingredients was reported by terminal operators.

Poultry feed business is developing somewhat more slowly, but manufacturers are generally quite optimistic and look for a steady pickup. Hog feed demand continues to drag.

Manufacturers noted that turkey prices have improved, with feeders apparently receiving satisfactory prices for heavier birds marketed for the Christmas season trade.

Dealers are said to be low on stocks, and with better demand from feeders developing operations at manufacturing plants had to be stepped up, in some cases considerably. One plant plans runs both Saturday and Sunday this week to catch up on a backlog, and other manufacturers also added to production schedules. Basic operations were at one and one-half to two shifts, with frequent overtime.

Southeast

Feed demand has been better in the Southeast this week, due in most part to freezing weather which has stimulated feed lot operations. Temperatures in the low 20's have been reported as far south as middle Florida.

This slight improvement in feed demand caused a flurry of buying from a large part of the feed trade, and reports are now that most requirements have been covered through December. Citrus pulp production for new crop material is now on the upswing, and supplies should be increasing immediately. There is still good demand for cottonseed hulls, and prices have advanced in some areas.

Baby chick placements in the North Georgia broiler section showed a slight increase for the last reporting period and were 29% more than for the same period last year.

Most southeastern corn supplies are going to the shelling trade since demand for ground snap corn has been such that the shelled material was bringing a higher return to producers. Citrus molasses for feed purposes is in excellent demand and most producers are finding it hard to satisfy old customers' requirements.

There has been good export demand as well as increased domestic buying by dealers and feed manufacturers for soybean meal this week, and the prices are up. With part or all of their requirements covered for the next month, buyers have been reluctant to buy sufficient supplies at prevailing levels. Some southeastern mills are beginning to offer soybean meal, and this no doubt will have some influence on the market in the near future.

Feed mill running time is slightly improved due to better feed demand, this trend is expected to continue through the winter months.

Ohio Valley

With several inches of snow blanketing the Ohio Valley and with subfreezing temperatures predicted to continue for some time, there was a decided increase this week in demand for formula feeds, and the outlook for continuing improvement in sales is brighter than it has been in many weeks.

The snow early this week was accompanied by high, piercing winds that made indoor feeding of all farm animals necessary.

Other bright aspects of the current situation were the stiffening of prices for eggs and hogs last week and a sizeable increase in baby chick placements on valley farms. Although there was an easing of the price upturn early this week, manufacturers in this area are hopeful the combination of more seasonable weather, firm prices and enlarged poultry flocks will be sufficiently prolonged to create a much more active demand for formula feeds.

An indication of this possibility was noted this week in reports by manufacturers that mill production had to be increased up to 25% over last week's output, largely because of increased demands for egg mashes and dairy and hog feeds. Prices remained steady to up 50¢ ton, but with supplies of some ingredients reported tightening, it is possible that formula feed prices will have to be advanced more sharply during coming weeks.

Mountain States

Calls for feed previously booked have been stronger—probably caused for the most part by more wintry weather necessitating use of more formula feeds in the feed yards and on the range.

Dairy and sheep feeding has been increased somewhat by weather conditions. Mills all seem to be busy at this time—more so than for some time in the past. Booking for turkey feeding for next year has begun, but at this time there is no indication whether or not production will be greater or less than for the past season.

Northeast

Colder weather and localized snows brought an improvement in dairy feed demand, and formula feed sales in general were above the preceding week's level.

The trade expects a good increase in dairy feed volume during the first half of December, but one spokesman said just now egg mashes "are our bread and butter." Turkey feed demand has slumped.

The broiler market is still on the weak side, but prices generally advanced 1¢ lb. Eggs held steady. Prices of ingredients generally were firm.

Running time of formula feed manufacturers was stepped up and ranged from 44 to 46 hours. The in-

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INDEX OF ADVERTISERS

Abbott Laboratories 99
Agri-Tech, Inc. 31
Alabama Flour Mills .....
Albumina Supply Co., Inc. 104
Allied Chem. & Dye Corp., Nitrogen Division .....
Amburgo Co. 14
American Agricultural Chemical Co. 60
American Cyanamid Co. 64, 65
American Dehydrators Assn. .....
American Elevator & Grain Division 83
American Mill Service Co., Inc. .....
Anchor Serum Co. 92
Anderson Box Company .....
Anderson, V. D., Co. 104
Arcady Farms Milling Co. 78
Archer-Daniels-Midland Co. .....
Arkell & Smiths .....
Armour & Co. .....
Aubrey Feed Mills .....

B-M-K-Corporation .....
Bacon, Edward R., Grain Co. 98
Baker, H. J., & Bro. .....
Barker, Moore & Main Co. 80
Barnard & Leas 11
Bartlett, The C. O., & Snow Co. 31
Barton Salt Co., The .....
Bates Grain Co. .....
Baughman Manufacturing Co., Inc. .....
Baxter, A. E., Engineering Co. 35
Bayou Molasses Co. .....
Bemis Bro. Bag Co. 91
Berg, Paul .....
Bigelow Sales Co. 111
Bingman Laboratories, Inc. .....
Black, Sivalls & Bryson, Inc. .....
Blatchford Calf Meal Co. 86
Blomfield-Swanson .....
Borden Company 21
Bosworth Commission Co. .....
Bowman Feed Products, Inc. 59
Bremco Alfalfa Mills, Inc. 38
Brewers Yeast Council, Inc. .....
Brower Manufacturing Co. 85
Bryant Engineering Co. 70, 107
Burrell, James H., & Sons, Inc. .....
Burrows Equipment Co. 63
Butler Chemical Co. .....
Butler Manufacturing Co. .....

Calcium Carbonate Co. 70
California Pellet Mill Co. 38, 77
Canadian Peat Sales Limited .....
Caple, A. B., Co. 10
Capper Publications .....
Cargill, Inc. 93
Catalin Corp. of America 55
Cesco 60
Champion Portable Mill Co. .....
Chantland Mfg. Co. .....
Chase Bag Co. .....
Checkerboard Elevator Co. 60
Chemical Mfg. Co., Inc., of California.... 51
Citrus Processors Association .....
Clinton Corn Processing Co. .....
Clofine, Herbert K. 35
Cocke & Co. 100
Colby Milling, Inc. 87
Collier Livestock Feeder Co. 83
Columbia Phosphate Co. 62
Columbia Quarry Co. 19
Columbian Steel Tank Co. .....
Commercial Minerals, Inc. .....
Commercial Solvents Corp. 52, 53
Consolidated Blenders, Inc. 110
Continental Grain Co. 111
Corn Products Refining Co. .....
Coronet Phosphate Co. 25
Coshocton Farmers Exchange Co. 96
Crete Mills 76
Cromwell Paper Co. .....

D. C. A., Inc. .....
Daffin Manufacturing Co. .....
Dannen Mills, Inc. 72
Davis, H. C., Sons' 107
Dawe's Laboratories, Inc. 16, 116
Day Company, The 44
Daycom, Inc. 62
Dayton Bag & Burlap Co. .....
Dehydrating Process Co. .....
Des Moines Oat Products Co. 37
Devold, Peder, Oil Co. 93
Diamond Huller Co. .....
Diamond V Mills, Inc. 26
Distillation Products Industries 97
Distillers Feed Research Council 13
Doty Technical Laboratories .....
Douglas Chemical Co. .....
Dow Chemical Co. .....
Dunbar Kapple, Inc. 97
Dunwoody, E., Co. 61
Duplex Mill & Mfg. Co. 17, 18
DuPont de Nemours & Co., E. I. 100

Early & Daniel Co. .....
Eastman Chemical Products, Inc. .....
Elam Grain Co. 86
Elco Products, Inc. .....
Elk Valley Alfalfa Mills, Inc. .....
Entoleter Division, Safety Industries, Inc... 58
Eschenheimer, Rudy, Co. .....
Eshelman, John W., & Sons .....
Essmueller Co. .....
Ewing, Ray, Co. 34, 38, 43, 50, 75, 96, 99, 102
Exact Weight Scale Co. 72
Excelsior Milling Co. 36

Fafard, Conrad, Inc. 98
Farmer Feeder Co., Inc. .....
Farmers Friend Mineral Co. .....
Feed Associates, Inc. 34
Ferrel, A. T., & Co. 14
Fischbein, Dave, Co. .....
Flambeau Milling Co. .....
Flavor Corp. of America 3
Food Machinery & Chemical Corp. .....
Food Research Laboratories, Inc. .....
Forster Mfg. Co. 73
Foster & Felter Co., The 107
Fox Co. 45
Fruen Milling Co. 7
Fulton Bag & Cotton Mills 46

Gabrielson Feeds .....
Georgia Peanut Co. .....
Godshalk Sheet Metal Fabricators 107
Gorton-Pew Fisheries 112
Grain Elevator Warehouse Co. .....
Grain Processing Corp. .....
Gump, B. F., Co. 60

Hales & Hunter Co. .....
Half Moon Mfg. & Trading Co., Inc. .....
Hallenback Inspection & Testing Lab. ....
Hallet & Carey Co. 112
Hand, Peter, Foundation 101
Hardy, H. E., & Co. .....
Hardy Salt Co. .....
Harris-Crane, Inc. .....
Harshaw Chemical Co. .....
Hayes and Stolz .....
Heil Co., The 36
Helm Manufacturing Co. .....
Henderson Mfg. Co. .....
Hercules Powder Company 61
Herring Sales Co. .....
Hess & Clark, Inc. 39, 40, 41, 42
Heterochemical Corporation .....
Heywood & Rabb, Inc. .....
Hiawatha Grain Co. 24
Hillier, A. L., Co. .....
Hilltop Laboratories 76
Hogenson Construction Co. .....
Hogg, N. D., Ltd. .....
Holt Products Co. .....
Homer Mfg. Co., Inc., The .....
Honeggers' & Co. 43
Honeymead Products Co. .....
Howes, S., Co., Inc. 12, 26, 48, 83, 93
Hubbard Milling Co. .....
Hubbell, Charles H. .....
Hudson Pulp & Paper Corp. .....
Hygeno Litter Company .....

Ibberson, T. E., Co. 63
Illinois Soy Products Co. 94
International Minerals & Chemical Corp. .....
International Paper Co. .....
International Salt Co., Inc. 11
Interstate Mills, Inc. 112
Iowa Limestone Co. .....

Jacobson Machine Works 107
Jersee Co. 34
Joseph, I. S., Co., Inc. .....

Kansas Farmer .....
Kansas Soya Products Co., Inc. .....
Kasco Mills, Inc. 89
Katz, Max, Bag Co. 73
Kess & Company 92
Kellogg, Spencer, & Sons, Inc. 90
Kent, Percy, Bag Co., Inc. 22
Keystone Steel & Wire Co. .....
Kindstrom-Schmoll Company .....
Klingaman Seed Grain 43, 107
Kosisch, Charles J., Grain Co. .....
Koppers Co., Inc. 89
Kraft Bag Corp. 50
Kraft Foods Co. .....

Laboratory Construction Co. .....
La Budde Feed & Grain Co. 80
Lakeland Engineering Equip. Co. .....
Land O'Lakes Creameries, Inc. .....
Landby Dehydrating Co. 111
Lauhoff Grain Co. 92
Leffwich, J. H., & Co., Inc. .....
Le Gear, Dr. Medicine Co. 72
Lilly, Eli, & Co. 46
Lima Armature Works 106
Limestone Products Corp. of America 69
Loncala Phosphate Co. .....

McCabe Grain Co., Ltd. .....
McKesson & Robbins, Inc. .....
Maney Bros. Mill & Elev. Co. 4, 112
Marco Chemical Co. .....
Martenis, C. J., Grain Co. 103
Martin, Theo. W., & Son .....
Mayo Shell Corp. 31
Melos Manufacturing Co. .....
Merchants Chemical Co., Inc. .....
Merck & Co., Inc. 9
Mid-Continent Grain Co. 60
Midland-Western, Inc. .....
Mid-West Business Exchange 107
Midwest Dried Milk Co. .....
Milbrew Co. .....
Mill Engineering & Mach. Co. .....
Miller Manufacturing Co. .....
Miller Publishing Co., The 82
Minneapolis Sewing Machine Co. .....
Minnesota Linseed Oil Co. 24
Minnesota Specialty Co., Inc. .....
Mitchell, Hutchins & Co. 56
Monsanto Chemical Co. .....
Morton Salt Co. .....
Munson Mill Machinery Co. .....
Murphy Products Co. .....
Myers-Sherman Co. 76

Nagel, Herman, Co. 99
Natl. Alfalfa Dehydrating & Mlg. Co. 49
National Cottonseed Products Assn., Inc... 88
National Distillers Products Corp 56
National Lead Co. .....
National Molasses Co. .....
National Oats Co. .....
National Renderers Assn. 67
Nellis Feed Co. 15
New Century Co., The .....
New England By-Products Corp. 112
Nichols Incorporated .....
Nigh, W. H., & Co. .....
Nitrogen Div., Allied Chem. & Dye Corp...
Nootbaar, H. V., & Co. .....
Nopco Chemical Co. 94, 95
North American Trading & Import Co..... 22
North Carolina Granite Corp. 92
North East Feed Mill Co. 90
Norwood Manufacturing Co. .....
Nutrena Mills, Inc. 93

Oyster Shell Products Corp. 78

Pabst Brewing Co. .....
Pacific Processing Corp. .....
Paper-Calmenson & Co. 98
Park, Philip R., Inc. 43
Parks, J. P., Co. .....
Parrish, N. K. 46
Parrish & Heimbecker .....
Paxton Processing Co., Inc. 107
Pay Way Feed Mills, Inc. .....
Peavey, F. H., & Co. 88
Pfizer, Chas., & Co., Inc. 27, 28, 29, 30
Piehl's Alfalfa Mill 93
Pittsburgh Plate Glass Co. .....
Pless & Sheahan .....
Popa Testing Laboratory, The .....
Prater Pulverizer Co. 66
Premier Peat Moss Corp. 54
Publicker Industries Inc. 22

Quaker Oats Co. 23

Ralston Purina Co. .....
Rapids Machinery Co. 87
Raymond Bag Corporation .....
Red River Alfalfa Co. .....
Reliance Feed Co. .....
Rhinehart Co. 67
Richardson, James, & Sons 26
Richardson Scale Co. 94
Riley Feed Co. .....
Rion Crush Stone Corp. 88
Rohloff Bros., Inc. 10

Rolfes, Geo. A. 75
Ross Machine & Mill Supply, Inc. 90
Ryde & Co. 19

St. Regis Paper Co. .....
Salsbury's, Dr., Laboratories 19
Scanlan, Ivan, & Co. .....
Schenley Distillers, Inc. .....
Schipke, Henry, & Assoc. .....
Schreiber Mills, Inc. .....
Schuster-Wise Grain & Feed Co. .....
Schutte Pulverizer Co., Inc. 84
Scroggins Grain Co. 11
Seagram, Joseph E., & Sons, Inc. 79
Security Mills, Inc. .....
Sedberry, J. B., Inc. .....
Seedburo Equipment Co. 89
Shellbuilder Co. 96
Shell Chemical Corp. .....
Sievert, C. W., and Associates 22
Silmo Chemical Corp. 78
Simonsen Mfg. Co. 101
Sinason-Teicher Inter American Grain Corp. 36
Small, The W. J., Co. 5
Smith, Edward E., & Co. .....
Soft Phosphate, Inc. 61
Southern Equipment Company 15
Southwest Mill Supply Co. .....
Sparks-Waters-Farnen, Inc. .....
Specifide, Inc. .....
Spencer Kellogg & Sons, Inc. 90
Sprout, Waldron & Co., Inc 47, 57, 80
Stabilized Vitamins, Inc. 71
Staley, A. E., Mfg. Co. .....
Staley Milling Co. .....
Standard Brands, Inc. 12, 101, 112
Standard Feed & Fertilizer, Inc. .....
Stone Mountain Grit Co. .....
Strong-Scott Mfg. Co. 51, 103
Suni-Citrus Products Co. 100
Sunset Feed & Grain Co., Inc. 97
Superior Feed Co. 72
Swanson, Carroll, Sales Co. 103
Swift & Co. 62

T. D. F. Company .....
Temms Industries .....
Taste Engineering, Inc. 84
Technical Products, Inc. .....
Thayer Scale and Engineering Corp. 75
Thomer, Carl, Equipment Co. .....
Thompson Printing Co. 96
Tobias Enterprises 68

Ultra-Life Laboratories, Inc. 44
Union Bag-Camp Paper Corp. .....
U. S. Industrial Chemicals Co. .....
Universal Hoist & Mfg. Co. 50

Van Camp Laboratories .....
Van Dusen Harrington Co. 88
Verity Mills, Inc. .....
Vitality Mills, Inc. .....
Vitamins, Inc. 73
VitaVax, Inc. .....
Vitren Corporation 87
Vy Lactos Laboratories, Inc. 105

W-W Grinder Corporation 38
Wallace & Tiernan Co. Incorporated 34
Ward Feed Co. .....
Warren-Douglas Chemical Co., Inc. .....
Waterloo Mills Co. .....
Weller, B. I., Co. .....
Wells, Ralph, & Co. .....
Wenger Mixer Mfg. Co. 34, 35
Western Condensing Co. 81
Western Yeast Company .....
White Shell Corporation .....
Whitmoyer Laboratories, Inc. 12, 37, 50
Whitten Co., The 67
Wilson & Co., Inc. .....
Wilson, R. S., Co. .....
Winsten Laboratories 67
Wirthmore Feeds 77
Wisconsin Alumni Research Foundation
Woodard Foods, Inc. .....
Woodward & Dickerson Inc. 19

Young, John F., Company 63

Zellers' Laboratories 12

creased activity was mostly attributed to filling in the gap caused by the holiday-shortened previous week.

Central States

Feed manufacturers report a marked pick-up in formula feed sales in the central states during the week ending Nov. 28. Observers believe normal fall business, which has been delayed this year because of unusually warm and open weather, is here at last.

Manufacturers say the week brought a flurry of cattle feed booking, prompted by the cold wave which has held much of the central states area for the last several days. Some tradesmen also believe that higher prices, which are being felt because of some ingredient increases, might also have encouraged extra booking.

Some firms report an order backlog extending to five days, while others say enough is on the books to run them for two days. The general feeling currently is one of good cheer, with the outlook for the remainder of the year fairly good.

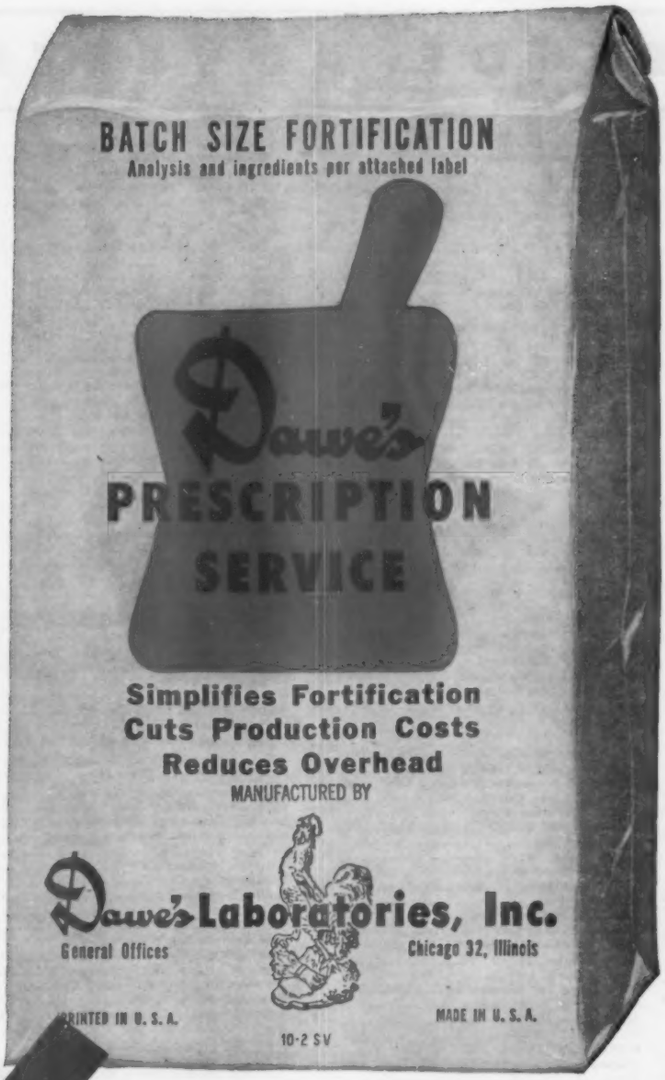
Pacific Northwest

The formula feed trade was quiet during the week, but some improvement in demand was noted here and there, mostly by those manufacturers who cater to dairy operators.

Volume of laying feeds was holding up well, but turkeys have all gone to market, and turkey feeds now being manufactured are confined to breeder rations. Broiler feed volume is down considerably in the face of the 19¢ price which has been prevalent in local wholesale markets for some weeks, and replacements have been cut back heavily, which reflects on the over-all volume of feed.

Dairy feed demand, especially for low-priced rations, has improved noticeably in recent weeks, and it is expected that dairy feed business will be fairly good all winter. Millfeed is in good demand, reflecting heavy usage in dairy rations, and cheap and off-grade grains are being continuously sought out by formulators of dairy rations who are endeavoring to cut feed costs.

Weather conditions are about normal for this time of the year, with light frosts in the past week or so just about putting an end to pastures for the season. Formula feed prices are holding steady, with competition in the field heavy for the accounts which are known to be sound and little attention being paid to slow accounts. Trade observers note that this tendency, which is becoming stronger all the time, will doubtless over the long pull tend to weed out the marginal producers and strengthen the position of the larger operators.



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